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PROCEEDINGS

OF THE

BOARD OF TRUSTEES

OF THE

SANITARY DISTRICT OF CHICAGO

From January 1, 1895, to December 31, 1895.

RIALTO BUILDING.

CHICAGO:

JOHN F. HIGGINS, PRINTER, 196-198 CLARK STREET.

1896.

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MEMBERS OF

BOARD OF TRUSTEES

OF THE

SANITARY DISTRICT OF CHICAGO.

For the Years 1895 and 1896.

20 D 15 Trustees 1895 Cont

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WILLIAM BOLDENWECK,	-	-	-	-	-	-	1376 N. Clark Street.
JOSEPH C. BRADEN,	-	-	-	-	-	-	159 La Salle Street.
ZINA R. CARTER,	-	-	-	-	-	-	225 W. Sixteenth Street.
BERNARD A. ECKHART,	-	-	-	-	-	-	66 N. Canal Street.
ALEXANDER J. JONES,	-	-	-	-	-	-	416 Roanoke Building.
THOMAS KELLY,	-	-	-	-	-	-	414 N. Y. Life Building.
JAMES P. MALLETT,	-	-	-	-	-	-	109 Rookery Building.
THOMAS A. SMYTH,	-	-	-	-	-	-	803 Jackson Boulevard.
FRANK WENTER,	-	-	-	-	-	-	115 W. Fourteenth Street.

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THOMAS F. JUDGE,	-	-	-	-	-	-	-	Clerk.
MELVILLE E. STONE,	-	-	-	-	-	-	-	Treasurer.
ISHAM RANDOLPH,	-	-	-	-	-	-	-	Chief Engineer.
GEORGE E. DAWSON,	-	-	-	-	-	-	-	Attorney.

OFFICES OF THE DISTRICT, RIALTO BUILDING.

COMMITTEES FOR 1895-96.

JUDICIARY.

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ALEXANDER J. JONES,

JOSEPH C. BRADEN.

FINANCE.

FRANK WENTER, Chairman.

ZINA R. CARTER,

JAMES P. MALLETT.

ENGINEERING.

WILLIAM BOLDENWECK, Chairman.

JAMES P. MALLETT,

ZINA R. CARTER,

THOMAS KELLY,

ALEXANDER J. JONES.

HEALTH AND PUBLIC ORDER.

THOMAS KELLY, Chairman.

THOMAS A. SMYTH,

JOSEPH C. BRADEN.

FEDERAL RELATIONS.

ZINA R. CARTER, Chairman.

JAMES P. MALLETT,

THOMAS A. SMYTH,

THOMAS KELLY,

ALEXANDER J. JONES.

LABOR.

JOSEPH C. BRADEN, Chairman.

FRANK WENTER.

WILLIAM BOLDENWECK.

RULES.

PRESIDENT OF THE BOARD, Chairman.

THOMAS A. SMYTH,

ZINA R. CARTER.

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The Board of Trustees meets every Wednesday at 1:30 o'clock P. M., except from May 1 to October 1, when the Board meets on the second and fourth Wednesdays of each month at the same hour.

ALL COMMITTEES SUBJECT TO CALL OF CHAIRMAN.

COMPLETE LIST OF MEMBERS OF BOARD OF TRUSTEES.

JOHN J. ALTPETER	-	-	Elected December 12, 1889 ; served to December 2, 1895
ARNOLD P. GILMORE	-		Elected December 12, 1889 ; served to December 2, 1895
RICHARD PRENDERGAST	-		Elected December 12, 1889 ; served to December 2, 1895
WILLIAM H. RUSSELL	-		Elected December 12, 1889 ; served to December 2, 1895
FRANK WENTER	-	-	Elected December 12, 1889 ; served to December 2, 1895
CHRISTOPH HOTZ	-	-	- Elected December 12, 1889 ; resigned January 16, 1892
JOHN A. KING	-	-	- Elected December 12, 1889 ; resigned July 22, 1891
MURRY NELSON	-	-	- Elected December 12, 1889 ; resigned June 19, 1891
HENRY J. WILLING	-	-	Elected December 12, 1889 ; resigned September 23, 1891
WILLIAM BOLDENWECK	-	-	- Elected to fill vacancy, November 3, 1891
LYMAM E. COOLEY	-	-	- Elected to fill vacancy, November 3, 1891
BERNARD A. ECKHART	-	-	- Elected to fill vacancy, November 3, 1891
THOMAS KELLY	-	-	- Elected to fill vacancy, November 8, 1892
WILLIAM BOLDENWECK	-	-	- Re-elected November 5, 1895
JOSEPH C. BRADEN	-	-	- Elected November 5, 1895
ZINA R CARTER	-	-	- Elected November 5, 1895
BERNARD A. ECKHART	-	-	- Re-elected November 5, 1895
ALEXANDER J. JONES	-	-	- Elected November 5, 1895
THOMAS KELLY	-	-	- Re-elected November 5, 1895
JAMES P. MALLETT	-	-	- Elected November 5, 1895
THOMAS A. SMYTH	-	-	- Elected November 5, 1895
FRANK WENTER	-	-	- Re-elected November 5, 1895

PRESIDENT

CLERK

TREASURER

CHIEF ENGINEER

ATTORNEY

GEORGE W. SMITH	-	-	-	Elected July 12, 1890; resigned April 25, 1891
ADAMS A. GOODRICH	-	-	-	Elected June 13, 1891; resigned February 23, 1892
ORRIN N. CARTER	-	-	-	Elected February 24, 1892; resigned August 15, 1894
GEORGE E. DAWSON	-	-	-	Elected August 15, 1894

SANITARY DISTRICT OF CHICAGO.

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PROCEEDINGS

—OF THE—

BOARD OF TRUSTEES

—OF THE—

SANITARY DISTRICT OF CHICAGO.

JANUARY 2, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and fifty-fourth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, January 2, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—eight (8) members, were present.

MINUTES.

The minutes of the regular meeting held December 26, 1894, were approved

as printed, on motion of Mr. Kelly, seconded by Mr. Boldenweck.

VOUCHERS.

The Clerk presented the following vouchers:

PAY ROLLS.

Eng. Dept., Chief Engineer's roll, (Dec., 1894).....	\$ 500 00	
Eng. Dept., Div. No. 1, Towpath, (Dec., 1894)	155 50	\$ 655 50
Clerical Dept., Clerk's roll, (Dec., 1894).....		891 64
Treasury Dept., Treasurer's roll, (Dec., 1894).....		166 67
General Account, General roll, (Dec., 1894).	\$ 235 00	
General Account, Trustees' roll, (Dec., 1894)	2,333 34	\$2,568 34
Total.....		\$4,282 18

ENGINEERING DEPARTMENT.

Construction Account—

E. D. Smith & Co. (Sec. D, extra work—raising Calumet Terminal Ry. bridge and roadbed, Dec. 10, 1894)	\$1,831 11
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ENGINEERING DEPARTMENT.

P. F. Pettibone & Co. (stationery).....	\$ 30 94
Stromberg, Allen & Co. (stationery).....	18 00
Western Bank Note & Engraving Co. (letter heads).....	27 50
Keuffel & Esser Co. (drafting material).....	18 24
F. Mayer & Co. (blue printing).....	115 39
Seelig & Kandler, (repairing tapes).....	2 10
Waukesha Hygeia Mineral Springs Co. (water).....	7 50
Christian Korrell, (livery).....	7 00
J. H. Spengler, (photo supplies).....	2 11
Thos. T. Johnston, (traveling).....	4 99
Alex. E. Kastl, (traveling).....	8 64
H. B. Alexander, (traveling).....	16 96
Ebin J. Ward (traveling).....	3 45
J. H. Spengler (traveling).....	3 19
Edw. Morrison, (emergency).....	17 67
	<u>\$ 233 68</u>

CLERICAL DEPARTMENT.

Western Bank Note & Engraving Co. (letter heads).....	\$ 16 00
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LAW DEPARTMENT.

Western Bank Note & Engraving Co. (letter heads).....	\$ 31 50
Jos. Donnersberger, (right of way services, Dec., 1894).....	300 00
John P. Wilson, (legal services, October to December, 1894).....	1,250 00
Chicago Edison Co., (repairs to lights).....	2 35
Waukesha Hygeia Mineral Springs Co. (water).....	3 75
Henry Gebhardt, (Yale lock fitted).....	3 00
Chicago Daily Law Bulletin, (subscription).....	3 00
The Joliet Times, (advertising, Loughran et al. case).....	25 00
Wyckoff, Seamans & Benedict, (paper)....	10 63

Geo. E. Dawson, (expense).....	\$39 81
	<u>\$1,669 04</u>

GENERAL ACCOUNT.

Sharp & Smith (vac-cine points).....	\$ 90 00
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POLICE DEPARTMENT.

Timothy Carroll, (rent of ground at Sag, Dec., 1893, to Dec., 1895).....	\$ 50 00
Grand total.....	<u>\$ 8,222 01</u>

Mr. Eckhart, seconded by Mr. Russell, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

REQUISITIONS.

The Clerk presented the following requisitions:

No. 486, Law Department, (law books).....	\$449 50
No. 487, Law Department, (stationery).....	4 00
No. 933, Police Department, (horse feed).....	387 50

Total..... \$841 00

Mr. Kelly, seconded by Mr. Eckhart, moved that Requisition No. 486, for the Law Department, as read and shown above, be allowed.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, and Requisition No. 486, for the Law Department, as read and shown above, allowed.

Mr. Eckhart, seconded by Mr. Russell, moved that Requisitions No. 487, for the Law Department, and No. 933, for the Police Department, as read and shown above, be allowed.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, and Requisitions No. 487, for the Law Department, and No. 933, for the Police Department, as read and shown above, allowed.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending December 29, 1894.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, Jan. 2, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending December 29, 1894, as the same have been reported to me:

Engineering Department.....	138
Clerical Department.....	4
Law Department.....	7
Treasury Department.....	1
Police Department.....	48
Telephone operator.....	1

Total employes..... 199

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

MONTHLY REPORT FROM CLERICAL DEPARTMENT.

The Clerk presented a report from the Clerical Department for the month of December, 1894.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, Jan. 2, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have the honor to herewith report that the total amount expended on account of and charged to the Clerical Department during the month of

December, 1894, was \$899.92, divided as follows:

Salaries.....	\$891 67
General expenses.....	8 25
Total.....	<u>\$899 92</u>

There are no outstanding liabilities, and the expenses for the present month will, from present indications, be about \$950.

The total amount expended and charged to the General Account during the month of December, 1894, was \$4,491.54, divided as follows:

Salaries.....	\$2,568 34
Printing.....	195 85
Advertising.....	23 80
Electric lighting (two months)....	154 37
Telephone service.....	732 92
Care of small-pox patients.....	683 76
General expenses.....	182 50
Total.....	<u>\$4,491 54</u>

There are no outstanding liabilities against the General Account, and the expenses for the present month will be about \$6,000.

During the month of December, 1894, there were warrants authorized and drawn against the various accounts for \$777,708.68, as follows:

Engineering Department.....	\$27,787 38
Clerical Department.....	899 92
Law Department.....	3,993 23
Treasury Department.....	166 67
General Account.....	4,491 54
Engineering Department (Construction Account).....	445,621 48
Bond account.....	150,000 00
Bond interest and premium account.....	137,500 00
Police Department.....	7,248 46
Total.....	<u>\$777,708 68</u>

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

APPOINTMENT OF ASSISTANT ATTORNEY.

The Clerk presented a report from the Attorney, stating that he had appointed Mr. Wilson G. Stanford as Assistant Attorney, vice Mr. W. W. Wheelock, resigned, and requesting the confirmation of the appointment; and the report was read.

Mr. Eckhart, seconded by Mr. Kelly,

moved that the report be adopted, ordered printed and placed on file, and the appointment of Mr. Wilson G. Stanford as Assistant Attorney, vice Mr. W. W. Wheelock, resigned, confirmed.

On roll-call the vote stood: Yeas—Messrs. Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—seven (7). Nays—Mr. Boldenweck—one (1).

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, and the appointment of Mr. Wilson G. Stanford as Assistant Attorney, vice Mr. W. W. Wheelock, resigned, confirmed.

The following is

THE REPORT:

“CHICAGO, Jan. 2nd, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—On account of his appointment as Attorney for the Board of Election Commissioners, Mr. W. W. Wheelock has handed me his resignation as an Assistant Attorney of this Department.

Subject to your confirmation, I hereby appoint Mr. Wilson G. Stanford to fill this vacancy, the appointment to take effect February 1st, 1895, or at such time as shall be arranged between him and myself.

Respectfully submitted,

(Signed) GEO. E. DAWSON,

Attorney.”

REPORT ON ALL RIGHT-OF-WAY LANDS ACQUIRED TO DATE.

Mr. Eckhart, Chairman, presented a report from the Joint Committee on Finance and Engineering, accompanied by three (3) plats, setting forth in detail the descriptions and cost of each of the tracts in the right-of-way acquired up to date.

Mr. Eckhart, seconded by Mr. Kelly, moved that the report be ordered printed, and with accompanying plats, placed on file.

Mr. Prendergast, seconded by Mr. Gilmore, moved as a substitute, that the report be ordered printed, and further consideration thereon be postponed for two weeks.

On roll-call on the substitute, the vote stood: Yeas—Messrs. Gilmore, Prender-

gast and Russell—three (3). Nays—Messrs. Boldenweck, Cooley, Eckhart, Kelly and Wenter—five (5).

Upon which result the President declared the motion lost.

On roll-call on the original motion of Mr. Eckhart, the vote stood: Yeas—Messrs. Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed, and with accompanying plats, placed on file.

The following is

THE REPORT:

“CHICAGO, Jan. 2d, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—On June 9th, 1892, your Honorable Body authorized the Joint Committee on Finance and Engineering to purchase at such prices as it might deem just and fair, all the lands necessary for the corporate purposes of this District in Cook, Du Page and Will Counties, included in the boundaries of the right of way for the Main Drainage Channel, as laid out and established by an ordinance passed March 30th, 1892.

By subsequent orders following upon the location of the successive portions of the remaining right of way, this Committee was authorized to purchase the lands falling within same.

At the time of giving these directions to the Joint Committee, the Attorney was also authorized to bring proceedings for the condemnation of such lands as could not be purchased. This Committee, from time to time, as agreements for the purchase of lands were effected, made reports thereon to your Honorable Body.

As almost the entire lands included within the right of way, from Robey street, in Chicago, to and beyond Lockport, in Will County, have been acquired by the District, it is deemed by your Committee desirable that an account in the nature of a final report should be made to the Board, setting forth in detail the several tracts of land acquired by the District, either by purchase or by condemnation, and the prices paid therefor, together with such comments and explanations as may seem pertinent and useful to the Board, with the view that such final report may furnish an account and perma-

nent record of the acquisition of right of way by the District, in such form that same may hereafter be readily referred to.

Fully ninety per cent of all the land secured has been by purchase, at prices that we consider fair and reasonable, in many cases at a lower figure than the original appraisement. Only in a few instances did we pay a little more than we deemed the property worth, in order to get possession of the land at once, without delaying the work of excavation, and to save the cost of a condemnation suit; where, however, an unreasonable and exorbitant price was demanded by the owners, after we had exhausted every effort to settle at a fair valuation, we were forced to resort to condemnation proceedings, the instances in which the verdict was much greater than the value of the property sought to be acquired were few; to them we call attention in our detailed report.

Where there is an apparent difference in the prices paid for lands adjoining one another, it is accounted for by the fact that some tracts are stone lands, some are low lands, subject to overflow, while others are situated higher and rarely ever submerged; or one tract may have no outlet, while another fronts upon a street or has railroad facilities. The District is to be congratulated in having secured near 7,000 acres of very valuable land, involving an outlay of about \$2,400,000, in so short a space of time, and at such reasonable prices, and a little over three miles of which lies within the city limits.

This report includes all lands now owned by or in possession of the District, beginning at Robey street, in Chicago, and extending southwesterly through the Counties of Cook, Du Page and Will, to a point about two miles this side of Joliet, Illinois.

For convenience in negotiating with owners, and in preparing condemnation proceedings, the several tracts of land were given numbers. These tract numbers will be adhered to in the following report; said tract numbers in Cook and Du Page Counties being given in their reverse order.

COOK COUNTY.

Tract 217a—Part of the east one-half (E. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$) of Section thirty (30), Township thirty-nine (39) North, Range fourteen (14) East of the Third Principal Meridian; containing seven and sixty-eight one-

hundredths (7.68) acres. Purchased from Ebenezer Buckingham, on April 12, 1894, for \$27,328.00 or \$3,558.00 per acre.

This tract was obtained at a reduced price by reason of its being a small tract and constituting the remainder of said Buckingham's holdings in said section.

Tract 217—Part of the east one-half (E. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$) of Section thirty (30), Township thirty-nine (39) North, Range fourteen (14) East of the Third Principal Meridian, containing thirty-one and forty-four one-hundredths (31.44) acres. Purchased from Ebenezer Buckingham, March 22, 1894, for \$128,904.00 or \$4,100.00 per acre.

This is improved dock property abutting upon the West Branch of the South Fork of the Chicago River.

Tract 216—Part of the east one-half (E. $\frac{1}{2}$) of the west one-half (W. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$) of Section thirty (30), Township thirty-nine (39) North, Range fourteen (14) East of the Third Principal Meridian, containing thirteen and eighty-three one hundredths (13.83) acres. Purchased April 19, 1894, from the estate of C. H. McCormick for \$48,405.00 or \$3,500.00 per acre.

Tract 215—Not acquired.

Tract 214—South one hundred (100) feet of the west one-half (W. $\frac{1}{2}$) of the west one half (W. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$), (except the boulevard) of Section thirty (30), Township thirty-nine (39) North, Range fourteen (14), East of the Third Principal Meridian, containing eighty-six one-hundredths (.86) of an acre. Purchased from A. C. Badger and W. T. Burgess, November 18, 1893, for \$3,440.00, or \$4,000.00 per acre. This lot fronts on the boulevard.

Tract 213—Part of the west one half (W. $\frac{1}{2}$) of the west one-half (W. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$) of Section thirty (30), Township thirty-nine (39) North, Range fourteen (14), East of the Third Principal Meridian, containing six and ninety-three one-hundredths (6.93) acres. Was acquired by purchases made July 23, 1894, and September 20, 1894, from the estate of C. H. McCormick, the heirs of Thos. Flaherty and others. The total sum paid was \$29,805.84, of which \$27,720.00 (or \$4,000.00 per acre) was paid for the land, and \$2,085.84 on account of the District's proportion of certain assessments for paving and sewerage on Western avenue. This land fronts on Western avenue and the boulevard.

Tracts 212, 211, 210, 209 and 208—These tracts comprise the boulevard, Western avenue and the streets and alleys in the subdivision called Manchester. Arrangements have not yet been completed with the West Park Commission, for the joint use, with them, of said boulevard, nor has any determination been reached with the city authorities for the crossing by our Channel of Western avenue.

Tract 207—Part of the southeast quarter (S. E. $\frac{1}{4}$) of Section twenty-five (25), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian. This tract has not yet been acquired, and may possibly not be needed. A final decision thereon has not yet been made.

Tract 206—Lots 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10, in Block 1, in Manchester, a subdivision of that part lying north of the Illinois and Michigan Canal of the east one-half (E. $\frac{1}{2}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section thirty-six (36), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian. Purchased March 1, 1894, from Theodore Prentiss at \$750.00 per lot; total \$7,500.00. The lots front on Western avenue and were vacant.

Tracts 205 and 201—Lots 11, 12, 21 and 22 in Block 1, in said Manchester, owned by Bridget McGuirl. These lots have not yet been acquired. An exorbitant price is demanded for them, and the District may be able to dispense with them.

Tracts 204 and 203—Parts of Lots 13, 14, 15 and 17, and all of Lot 18, in Block 1, in Manchester. These belong to the Chicago Elevated Terminal Railway, and will probably not be deemed necessary for the purposes of the District.

Tract 202—Lots 19 and 20, in Block 1, in Manchester. Purchased March 1st, 1894, from Daniel Jones, at \$500.00 per lot; total, \$1,000.00. These lots front on Ash street little frequented, and are vacant.

Tracts 200 and 199—Lots 23, 24, 25, 26, 27, 28, 29, 30, 31 and 32, in Block 1, and Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12, in Block 2, in Manchester. Purchased March 1st, 1894, from Theodore Prentiss, at \$500.00 per lot; total for twenty-two lots, \$11,000.00. The lots are vacant, and front on said Ash street.

Tract 198a—Lot 13, in Block 2, in Manchester. Purchased March 2, 1894, from Hollis P. Brown, for \$500.00.

Tract 198—Lot 14, in Block 2, in Man-

chester. Purchased March 2, 1894, from Clarence D. Brown, for \$500.00.

Tract 197—Lot 15, in Block 2, in Manchester. Purchased March 2, 1894, from C. D. Brown, for \$500.00.

Tract 196—Lot 16, in Block 2, in Manchester. Purchased March 10, 1894, from Wm. G. Cody, for \$500.00.

Tracts 195, 194, 193, 192 and 191—A small portion of Block 7, and west half of Block 2, all of Block 3, part of Block 6, and parts of Lots 10, 11 and 12, in Block 5, in Manchester. These lots and blocks belong to the Chicago Elevated Terminal Railway Company, except said west half of Block 2, which belongs to the Union Stock Yards and Transit Company. No agreement has been as yet reached for their purchase.

Tract 190—Lots 6, 7, 8 and 9, in Block 5, in Manchester. Purchased December 5th, 1893, from Frances Livingston, for \$300.00 per lot, and \$1,000 for house and three barns on lot 8, total \$2,200.00.

Tract 189—Lots 1, 2, 3, 4 and 5, of Pitts & Lichty's re-Subdivision of Blocks 3 to 6, in Manchester. Purchased December 30th, 1893, from William Horn, for \$500.00 per lot and \$1,500.00 for two story frame house, two barns and the extinction of a five-year lease. These lots front on Thirty-second street.

Tracts 188 and 187—Lots 21 and 22, in Sabath's Re-subdivision of Block 4, in Manchester. Obtained by condemnation proceedings July 14th, 1894, from Charles Jindrich; Lot 22 for \$475.00, Lot 21 for \$450.00. Lot 22 is the corner lot.

Tract 186—Lots 19 and 20, in Sabath's Re-subdivision of Block 4, in Manchester. Purchased Lot 20 January 8th, 1894, from Frank Houser, for \$500.00; Lot 19, obtained by condemnation July 14, 1894, from Adolph and Frantiska Blecha for \$450.00.

Tract 185—Lots 17 and 18, in Sabath's Re-subdivision of Block 4, in Manchester. Purchased December 30, 1893, from August Leddin for \$500.00 per lot, and \$700.00 for one and one-half story frame cottage; total, \$1,700.00.

Tract 184—Lot 16, in Sabath's Re-subdivision of Block 4, in Manchester. Purchased January 8, 1894, from Frank Janos for \$500.00.

Tract 183—Lot 15, in Sabath's Re-subdivision of Block 4, in Manchester. Purchased December 30th, 1894, from August and Augusta Engelke for \$500.00, and

\$800 for one and one-half story frame cottage.

Tracts 182, 181 and 180—Lots 12, 13 and 14, in Sabath's re-Subdivision of Block 4, in Manchester. Obtained by condemnation proceedings July 14th, 1894, from Charles Jindrich, for \$450.00 per lot; total, \$1,350.00.

Tract 179—Lots 1 and 2, in Sabath's re-Subdivision of Block 4, in Manchester. Purchased December 5th, 1893, from Robert Berndt, at \$500.00 per lot and \$700.00 for a house and saloon building; total, \$1,700.00.

Tracts 178 and 177—Lots 3, 4, 5, 6, 7, 8, 9, 10, 11 and 33, in Sabath's re-Subdivision of Block 4, in Manchester. Obtained by condemnation proceedings July 14th, 1894, from Charles Jindrich, except Lot 33; Lots 3 to 10, inclusive, at \$600.00 per lot; Lot 11, \$650.00, and \$200.00 for squatter's right, and Lot 33, purchased from Fred Scharff, July 26th, 1894, for \$500.00; total, \$6,150.00.

Tract 176—Lots 30, 31 and 32, in Sabath's re-Subdivision of Block 4, in Manchester. Purchased February 5th, 1894, from Johanna Klank, at \$500.00 per lot, and \$700.00 for one-story frame house and barns; total \$2,200.00.

Tract 175—Lots 23, 24, 25, 26, 27, 28, and 29, in Sabath's re-subdivision of Block 4, in Manchester. Lots 23, 24 and 26. Obtained by condemnation proceedings, July 14, 1894, from Charles Jindrich. Lot 23, the corner lot, for \$475.00 and lots 24 and 26 for \$450.00 each. Lot 25, in said Block 4. Purchased January 8th, 1894, from Frank Krulis for \$500.00 and \$400.00 for one story frame cottage. Lot 27, in said Block 4. Purchased January 8th, 1894, from Anton Velcek for \$500.00. Lot 28, in said Block 4. Purchased February 16, 1894, from John Vondrachek for \$500.00, and \$600.00 for new one story frame house. Lot 29, in said Block 4. Purchased January 8th, 1894, from Anna Vesela for \$500.00, and \$800.00 for one story frame house and out-house.

Tract 174—Lots 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49 and 50, in Lichty's Subdivision, of Blocks 4 and 5 in Manchester. Purchased December 5, 1893, from Frances Livingston at \$300.00 per lot. In addition there was paid, for the extinguishment of rights of squatters, and for the removal of houses, barns and out-buildings, \$775.00.

Tract 173—Parts of Lots 36, 37 and 38, in Lichty's Subdivision of Blocks 4 and 5 in Manchester. Owned by Chicago Elevated Terminal Railway Company. Not yet acquired by the District.

Tract 172—Part of the east one-half (E. $\frac{1}{2}$) of the northwest quarter (N. W. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section thirty-six (36), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian, containing thirteen and seventy one-hundredths (13.70) acres. Purchased from the estate of George Wilshire, July 12th, 1893, for \$41,100.00, or \$3,000.00 per acre.

Tract 171—Part of the west one-half (W. $\frac{1}{2}$) of the northwest quarter (N. W. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section thirty-six (36), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian, containing fourteen and eight one-hundredths (14.8) acres. Purchased from the estate of Wm. Wilshire, December 18th 1893, for \$42,240.00, or \$3,000.00 per acre.

Tract 170—Part of the east one-half (E. $\frac{1}{2}$) of the northeast quarter (N. E. $\frac{1}{4}$) of the northwest quarter (N. W. $\frac{1}{4}$) of Section thirty-six (36), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian, containing ten and twenty-six one-hundredths (10.26) acres. Purchased from Joseph A. Sleeper, November 25th, 1893 for \$30,780.00, or \$3,000.00 per acre.

Tract 169—Part of the north one-half (N. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of the northwest quarter (N. W. $\frac{1}{4}$), except railroads, of Section thirty-six (36), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian, containing six and fifty-one one-hundredths (6.51) acres. Purchased from Thos. Rutter, September 8, 1893, for \$19,530.00, or \$3,000.00 per acre.

Tract 168—Part of the west one-half of the northeast quarter (N. E. $\frac{1}{4}$) of the northwest quarter (N. W. $\frac{1}{4}$) of Section thirty-six (36), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian, containing six and twenty-six one-hundredths (6.26) acres. Purchased from Henry H. Walker, et al., on September 1, 1893, (along with tract 129 post) for \$23,000.00. The price per acre paid for this tract was \$3,000.

Tract 167—Part of the east one-half (E. $\frac{1}{2}$) of the east one-half (E. $\frac{1}{2}$) of the northwest quarter (N. W. $\frac{1}{4}$) of the northwest quarter (N. W. $\frac{1}{4}$) of Section thirty-six (36), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian, containing one and sixty-three one-hundredths (1.63) acres. Purchased from Busse and Mittlestaedt,

September 22, 1893, for \$4,890.00, or \$3,000.00 per acre.

Tract 166—West one-half (W. $\frac{1}{2}$) of the east one-half (E. $\frac{1}{4}$) of the northwest quarter (N. W. $\frac{1}{4}$) of the northwest quarter (N. W. $\frac{1}{4}$) of Section thirty-six (36), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian, containing ten and twenty-two one-hundredths (10.22) acres. Purchased from Union Safe Deposit Company, sixty-three hundredths (.63) acres thereof, August 15th, 1894, and the remainder September 29th, 1894. The total amount paid was \$23,000.00, or \$2,250.00 per acre. The last purchase was made to obtain access to our Channel from the West Fork, and was made after all other purchases in the vicinity had been concluded, and on a favorable market for the District.

Tract 165—This tract, on completion of survey, proved to contain but .008 acres, and hence was not acquired.

Tract 164—Southwest quarter (S. W. $\frac{1}{4}$) of the northwest quarter (N. W. $\frac{1}{4}$), (north of Santa Fe Railroad), of Section thirty-six (36), Township thirty-nine (39) North, Range Thirteen (13), East of the Third Principal Meridian, containing twenty-two and eighty-seven hundredths (22.87) acres. Purchased from Jos. Donnerberger, June 21st, 1893, for \$68,604.00, or \$3,000.00 per acre.

Tract 163—East one-half (E. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$), except railroads, of Section thirty-five (35), Township Thirty-nine (39) North, Range thirteen (13), east of the Third Principal Meridian, containing seventeen and forty-four hundredths (17.44) acres. Purchased from Luke and Michael Coyne, trustees, for \$55,820.00, April 2d, 1894. Of this sum, \$52,320.00, or \$3,000.00 per acre, was paid for the land, and \$3,500.00 for improvements thereon.

Tract 162—Part of the northwest quarter (N. W. $\frac{1}{4}$) of the southeast quarter (S. E. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section thirty-five (35), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian, containing seventy-three one-hundredths (.73) acres. Purchased from John J. O'Neill, January 15th, 1894, for \$1,825.00, or \$2,500 per acre.

Tract 161—East one-half (E. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$) of the southeast quarter (S. E. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section thirty-five (35), Township thirty-nine (39) North, Range thirteen (13), East of the

Third Principal Meridian, containing five and ten one-hundredths (5.10) acres. Purchased from Lorenzo Pratt, November 8th, 1893, for \$11,730.00, or \$2,300.00 per acre. This is an inside tract with no means of outlet.

Tract 160—West one-half (W. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$) of the southeast quarter (S. E. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section thirty-five (35), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian, containing five and ten one-hundredths (5.10) acres. Purchased from Charles W. Boynton, November 18th, 1893, for \$11,730.00, or \$2,300.00 per acre.

Tract 159—East one-half (E. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$), north of Santa Fe Railroad, of Section thirty-five (35) Township thirty-nine (39), North, Range thirteen (13) East of the Third Principal Meridian, containing two and seventy one-hundredths (2.70) acres. Purchased from Harriet Jones, et al, October 16, 1893, for \$2,300 per acre. See Tract 156.

Tract 158—Part of the East one-half (E. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section thirty-five (35), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian, containing six and fifty-eight one-hundredths (6.58) acres. Purchased from Harriet Jones, et al., December 16, 1893, for \$2,250.00 per acre. See Tract 156.

Tract 157—Part of the west one-half (W. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section thirty-five (35), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian, containing two and fifty-one one-hundredths (2.51) acres. Purchased from Jacob Rehm, November 18th, 1893, for \$5,522.00, or \$2,200.00 per acre.

Tract 156—North 264.6 feet of the west one-half (W. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of Section thirty-five (35), Township thirty-nine (39) North, Range thirteen (13). East of the Third Principal Meridian, containing eight and eleven one-hundredths (8.11) acres. Purchased from Harriet Jones, et al, October 16th, 1893, for \$2,000.00 per acre for the west four acres and \$2,250.00 per acre for the remainder of the tract.

Note—This tract, together with tracts 158 and 159, were purchased for \$38,258.00.

Tract 155—Part of west one-half (W. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of the

Section thirty-five (35), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian, containing nine and forty-three one-hundredths (9.43) acres. Purchased from the heirs of Thomas Tully on June 29th, 1894, for \$25,000.00. Of this sum \$3,782.50 was allowed for plant, etc., the price paid per acre being \$2,250.00.

Tract 154—On survey this tract proved so small that it was not acquired.

Tract 153—Part of the east one-half (E. $\frac{1}{2}$) of the east one-half (E. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$), north of the Santa Fe Railroad, of Section thirty-five (35), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian, containing thirteen and three hundred and twenty-eight one-thousandths (13.328) acres. Purchased from Union Safe Deposit Company on July 20th, 1893, for \$21,324.80, or \$1,600.00 per acre.

Tract 152—Part of the west one-half (W. $\frac{1}{2}$) of the east one-half (E. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$), north of Santa Fe Railroad, of Section thirty-five (35), Township thirty-nine (39) North, Range thirteen (13) East of the Third Principal Meridian, containing thirteen and four hundred and two one-thousandths (13.402) acres. Purchased from Jos. Donnersberger, July 17, 1893, for \$21,443.20, or \$1,600.00 per acre.

Tract 152—Part of the west one-half (W. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$) of Section thirty-five (35), Township thirty-nine (39) North, Range thirteen (13) East of the Third Principal Meridian, containing seven and twenty-two one hundredths (7.22) acres. Purchased from H. W. Jackson, receiver, January 11th, 1893, for \$11,552.00, or \$1,600.00 per acre.

Tract 151—Part of the west one-half (W. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$) of Section thirty-five (35), Township thirty-nine (39) North, Range thirteen (13) East of the Third Principal Meridian, containing twenty and twenty-eight one-hundredths (20.28) acres. Purchased from W. B. Gates, July 12, 1893, for \$32,000.00, being about \$1,575.00 per acre. The purchase was made for the lump sum.

Tract 150—Part of the east one-half (E. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of Section thirty-four (34), Township thirty-nine (39) North, Range thirteen (13) East of the Third Principal Meridian, containing twenty-seven and thirty-

four one-hundredths (27.34) acres. That part of the above tract which falls within the west one-half (W. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of the southeast quarter (S. E. $\frac{1}{4}$), containing thirteen and sixty-three one-hundredths (13.63) acres, was purchased from Ellen A. Minier, et al. September 19, 1893, for \$20,445.00 or \$1,500.00 per acre. The remainder, containing thirteen and seventy-one one-hundredths (13.71) acres, was purchased from N. T. Wright, at the same time, for \$21,000.00 or \$1,530.00 per acre. This tract fronts on Crawford avenue.

Tract 149—Part of the east one-half (E. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$) of the southeast quarter (S. E. $\frac{1}{4}$) of Section thirty-four (34), Township thirty-nine (39) North, Range thirteen (13) East of the Third Principal Meridian, containing thirteen and fifty-nine one-hundredths (13.59) acres. Purchased from F. O. Jones, September 8, 1893, at \$1,450.00 per acre. See Tract 139.

Tract 148—By an error this number was not given to any piece of land.

Tract 147—Part of the south one-half (S. $\frac{1}{2}$) of the northwest quarter (N. W. $\frac{1}{4}$) of the southwest quarter (S. W. $\frac{1}{4}$) of the southeast quarter (S. E. $\frac{1}{4}$) of Section thirty-four (34), Township thirty-nine (39) North, Range thirteen (13) East of the Third Principal Meridian, containing eighty-one one-hundredths (.81) acres. Purchased from the estate of Wm. B. Ogden, September 21, 1893, for \$1,100.00 or \$1,400.00 per acre.

Tract 146—Part of the north one-half (N. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$) of the southwest quarter (S. W. $\frac{1}{4}$) of the southeast quarter (S. E. $\frac{1}{4}$) of Section thirty-four (34), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian, containing four and eighty one-hundredths (4.80) acres. Purchased from C. O. Jones, September 8, 1893, for \$1,450.00 per acre. See tract 140.

Tract 145—South one-half (S. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$) of the southwest quarter (S. W. $\frac{1}{4}$) of the southeast quarter (S. E. $\frac{1}{4}$) of Section thirty-four (34), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian, containing five and five one-hundredths (5.05) acres. Purchased from the trustees of M. O. Jones, on September 8, 1893, for \$1,450.00 per acre. See Tract 138.

Tract 144—West one-half (W. $\frac{1}{2}$) of the northeast quarter (N. E. $\frac{1}{4}$), (north

of the S. F. R. R.) of Section three (3), Township thirty-eight (38) North, Range thirteen (13), East of the Third Principal Meridian, containing three and forty-one one-hundredths (3.41) acres. The easterly seventy-seven one hundredths (.77) of an acre of this tract was purchased from Francis E. Hinckley, on October 18, 1893, for \$1,000.00, being \$1,330.00 per acre. The westerly two and sixty-four one-hundredths (2.64) acres were purchased from John V. LeMoyné on December 18, 1893. See Tract 141.

Tract 143—Part of the east one-half (E. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$) of Section thirty-four (34), Township thirty-nine (39) North, Range thirteen (13), East of the Third Principal Meridian, containing nine and twenty-five one-hundredths (9.25) acres. Purchased on September 11, 1893 from W. A. Burnham, Trustee, for \$12,950 or \$1,400 per acre.

Tract 142—On survey no land in this tract was within our right of way.

Tract 141—Part of the northwest quarter (N. W. $\frac{1}{4}$) of Section three (3), Township thirty-eight (38) North, Range thirteen (13) East of the Third Principal Meridian, containing forty-four and twelve one hundredths (24.12) acres. Purchased from John V. LeMoyné, on December 18, 1893, together with the west two and sixty-four one-hundredths (2.64) acres of Tract 144, for \$70,000.00. The purchase was agreed on for a lump sum, and figures out \$1,500.00 per acre. See Tract 144.

Tract 140—Part of the south one-half (S. $\frac{1}{2}$) of the northeast quarter (N. E. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section four (4), Township thirty-eight (38) North, Range thirteen (13) East of the Third Principal Meridian, containing sixty-six one-hundredths (.66) acres. Purchased from Caroline O. Jones, September 8, 1893, for \$1,150.00 per acre.

Note—This tract was purchased with Tract 146, the sum paid for both being \$8,000.00.

Tract 139—Part of the north one-half (N. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of the northeast (N. E. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section four (4), Township thirty-eight (38) North, Range thirteen (13) East of the Third Principal Meridian, containing four and sixty one-hundredths (4.60) acres, purchased from Frances O. Jones, on September 8, 1893, (with Tract 149) for \$25,050.00. The price per acre paid for this tract was \$1,150.00.

Tract 138—South one-half (S. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section four (4), Township thirty-eight (38) North, Range (13) East of the Third Principal Meridian, containing four and ninety-seven one-hundredths (4.97) acres. Purchased from the Trustees of M. O. Jones, September 8, 1893, for \$1,150.00 per acre.

Note—This tract, together with the west one-half (W. $\frac{1}{2}$) of Tract 137 and and Tract 145, was purchased from the said trustees for \$16,450.00. The price per acre is as stated under the respective tracts. The Trustees of L. B. McCagg were paid \$2,300.00 for the east half of Tract 137.

Tract 137—Part of the east one-half (E. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section four (4), Township thirty-eight (38) North, Range thirteen (13), East of the Third Principal Meridian, containing three and sixty-six one-hundredths (3.66) acres. Purchased from the Trustees of M. O. Jones and L. B. McCagg, September 8th, 1893, for \$1,150.00 per acre. See Tract 138.

Tract 136—Part of the west one-half (W. $\frac{1}{2}$) of the east one-half (E. $\frac{1}{2}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section four (4), Township thirty-eight (38), North, Range thirteen (13), East of the Third Principal Meridian, containing thirteen and eighty-four one-hundredths (13.84) acres. Purchased from the estate of William B. Ogden, September 21st, 1893, for \$14,165.00, being \$1,050 per acre.

Tract 135—Part of the south ten (10) acres of the northwest quarter (N. W. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section four (4), Township thirty-eight (38) North, Range thirteen (13), East of the Third Principal Meridian, containing one and ninety-three one-hundredths (1.93) acres. Purchased from Orville Peckham, October 16th, 1893, for \$2,000.00, or \$1,035.00 per acre.

Tract 134—North ten (10) acres of north twenty (20) acres of southwest quarter (S. W. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section four (4), Township thirty-eight (38) North, Range thirteen (13) East of the Third Principal Meridian, containing ten (10) acres. Purchased from George H. Merrick, June 28th, 1893, for \$10,000.00, or \$1,000.00 per acre.

Tract 133—South ten (10) acres of north twenty (20) acres of the southwest quarter (S. W. $\frac{1}{4}$) of the northeast quar-

ter (N. E. $\frac{1}{4}$) of Section four (4), Township thirty-eight (38) North, Range thirteen (13), East of the Third Principal Meridian, except railroad, containing nine and eighty-six one-hundredths (9.86) acres. Purchased October 30th, 1893, from Julian Hawthorne, et al., for \$9,860.00, or \$1,000.00 per acre.

Tract 132—Part of the north ten (10) acres of the south twenty (20) acres of the west one-half (W. $\frac{1}{2}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section four (4), Township thirty-eight (38) North, Range thirteen (13), East of the Third Principal Meridian, containing six and eighty-seven one-hundredths (6.87) acres. Purchased from Thomas J. Rice, January 15th, 1894, for \$7,557.00, or \$1,100.00 per acre. This tract, it was claimed, was more valuable on account of its railroad frontage.

Tract 131—Part of the south ten (10) acres of the west one-half (W. $\frac{1}{2}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section four (4), Township thirty-eight (38) North, Range thirteen (13), East of the Third Principal Meridian, containing one and twenty-nine one-hundredths (1.29) acres. Purchased from Charles E. Towne, September 19th, 1893, for \$1,290.00, or \$1,000.00 per acre.

Tract 130—Part of the east one-half (E. $\frac{1}{2}$) of the northwest quarter (N. W. $\frac{1}{4}$) of Section four (4), Township thirty-eight (38) North, Range thirteen (13) East of the Third Principal Meridian, containing twenty-two and sixty-four one-hundredths (22.64) acres. Purchased November 22, 1893, from Levi P. Morton, for \$23,206.00 or \$1,025.00 per acre.

Tract 129—East one-half (E. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$), north of railroad, of Section four (4), Township thirty-eight (38) North, Range thirteen (13) East of the Third Principal Meridian, containing five and four one-hundredths (5.04) acres. Purchased (with Tract 168 ante) from Henry H. Walker et al., for \$23,000.00. The price paid for this tract was \$837.00 per acre. This land was a small triangle having no outlet.

Tracts 128 and 127—Part of the east one-half (E. $\frac{1}{2}$) of the west one-half (W. $\frac{1}{2}$) of the west one-half (W. $\frac{1}{2}$) of Section (4), Township thirty-eight (38) North, Range thirteen (13) East of the Third Principle Meridian, containing thirteen and ninety-three one-hundredths (13.93) acres. Purchased December 6, 1893, from the estate of Caroline Churchill, for \$13,930.00 or \$1,000.00 per acre.

Tracts 126 and 125—Part of the west

one-half (W. $\frac{1}{2}$) of the west one-half (W. $\frac{1}{2}$) of the west one-half (W. $\frac{1}{2}$) of Section four (4), Township thirty-eight (38) North, Range thirteen (13) East of the Third Principal Meridian, containing seventeen and thirty-three one-hundredths (17.33) acres, obtained by condemnation proceedings from John R. Cook, August 17, 1894. The finding was \$21,666.66 for property taken and \$8,229.66 for damage to land not taken, being \$1,250.00 per acre for the land taken, \$625.00 per acre damages for the five (5) acres adjoining that taken and \$312.50 per acre damages for one-half of the remainder of the land not taken. An attempt was made to acquire these tracts by purchase before suit to condemn same was begun, but, on account of the extravagant demands made by the owners, not only for the portion taken but for damages to the remainder of the lands no settlement was reached. The tract immediately adjoining these on the west was purchased for \$800.00 per acre, and that next adjoining on the east at \$1,000.00 per acre, and in neither case was anything paid for damages to the remainder. Indeed it is generally conceded that the effect of our channel will be to increase the value of the adjoining lands. The District has in no other case of purchase, on this side of Summit, Ill., paid for damages to remaining lands. A trial, lasting three weeks, before a jury resulted in a disagreement. The matter was thereafter submitted to Judge Gibbons, on the same evidence, with the result above stated.

Tract 124—Part of the east one-half (E. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of Section five (5), Township thirty-eight (38) North, Range thirteen (13) East of the Third Principal Meridian, containing twenty-seven and seventy-nine one-hundredths (27.79) acres. Purchased from Matthew Laffin, August 26, 1893, for \$800.00 per acre.

Tract 123—Part of the west one-half (W. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of Section five (5), Township thirty-eight (38) North, Range thirteen (13), East of the Third Principal Meridian, containing twenty-eight and fifteen one-hundredths (28.15) acres. Purchased from Matthew Laffin, August 26th, 1893, for \$800.00 per acre.

Tract 122—Part of the east one-half (E. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$) of Section five (5), Township thirty-eight (38) North, Range thirteen (13), East of the Third Principal Meridian, containing thirty-two and fifty-six one-hundredths (32.56) acres. Purchased

from Matthew Laffin, August 23rd, 1893, for \$600.00 per acre. See Tract 121.

Tract 121—East one half (E. $\frac{1}{2}$) of the northwest quarter (N. W. $\frac{1}{4}$) (north of Canal), of Section eight (8), Township thirty-eight (38) North, Range thirteen (13), East of the Third Principal Meridian, containing thirty-eight one hundredths (.38) of an acre. Was purchased from Matthew Laffin, with Tracts 122, 123 and 124, containing in all eighty-eight and eighty-eight one-hundredths (88.88) for \$65,000.00. The price per acre paid for this tract was \$600.00.

Tract 119—Part of the northeast quarter (N. E. $\frac{1}{4}$) of the southwest quarter (S. W. $\frac{1}{4}$) of the southwest quarter (S. W. $\frac{1}{4}$) of Section five (5), Township thirty-eight (38) North, Range thirteen (13), East of the Third Principal Meridian, containing four and nine one-hundredths (4.09) acres. Purchased October 18th, 1893, from Jacob Rosencrans, et al, for \$2,454.00, or \$600.00 per acre.

Tract 120—West one-half (W. $\frac{1}{2}$) of the northwest quarter (N. W. $\frac{1}{4}$), north of canal, of Section eight (8), Township thirty-eight (38) North, Range thirteen (13) East of the Third Principal Meridian. See Tract 114.

Tracts 118 and 117—Part of the west one-half (W. $\frac{1}{2}$) of the west one-half (W. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$) and the southeast quarter of the southwest quarter (S. W. $\frac{1}{4}$) of the southwest quarter (S. W. $\frac{1}{4}$) of Section five (5), Township thirty-eight (38) North, Range thirteen (13) East of the Third Principal Meridian, containing nineteen and forty-four one-hundredths (19.44) acres. Purchased September 11, 1893, from the estate of Geo. H. Norris, for \$11,664.00 or \$600.00 per acre.

Tracts 116 and 115—Part of Blocks 28 and 29 in Nickerson's Subdivision of Section six (6), Township thirty-eight (38) North, Range thirteen (13) East of the Third Principal Meridian, containing seven and seventeen one-hundredths (7.17) acres. Purchased February 16, 1894, from W. S. Warren, et al., for \$5,736.00 or \$800.00 per acre.

This tract runs diagonally through said blocks, and cuts off railroad connection from the remainder thereof.

Tract 114—All of Section seven (7), Township thirty-eight (38) North, Range thirteen (13) East of the Third Principal Meridian, lying north of canal, and Tract 120, west one-half ($\frac{1}{2}$), northwest quarter (N. W. $\frac{1}{4}$), north of canal, of Section eight (8), Township thirty-eight (38)

North, Range thirteen (13) East of the Third Principal Meridian, together containing two hundred and twenty-two and twenty-five one hundredths (222.25) acres. Purchased from Moses J. Wentworth, September 20, 1893, for \$122,237.50 or \$550.00 per acre.

Tract 113a—Part of the northeast quarter (N. E. $\frac{1}{4}$) of Section twelve (12), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing sixty-two and ninety-seven one-hundredths (62.97) acres. Purchased from the estate of W. B. Ogden, September 21st, 1893, for \$31,455.00 or \$500.00 per acre.

Tract 113—Part of the southwest quarter (S. W. $\frac{1}{4}$) of the southeast quarter (S. E. $\frac{1}{4}$) of Section one (1), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing six and forty one-hundredths (6.40) acres. Purchased April 28, 1893, from Geo. W. Cass, for \$1,600.00 or \$250.00 per acre.

This was low ground subject to overflow

Tract 112—Part of the northwest quarter (N. W. $\frac{1}{4}$) of Section twelve (12), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing three and fifty one-hundredths (3.50) acres. Purchased from Philip and Mary Prescott on April 1st, 1893, for \$210.00 per acre. See Tract 98. This was low land subject to overflow.

Tract 111—Part of the southeast quarter (S. E. $\frac{1}{4}$) of the southwest quarter (S. W. $\frac{1}{4}$) of Section one (1), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing six and three one-hundredths (6.03) acres. Purchased April 18th, 1893, from Elizabeth Lipe for \$1,959.75, or \$325.00 per acre.

Tract 110—Part of the east (E.) fraction of the northeast quarter (N. E. $\frac{1}{4}$) of Section one (1), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing three and forty-five one-hundredths (3.45) acres. Purchased from the Estate of W. B. Ogden, May 23rd, 1893, for \$315.00 per acre. See Tract 103.

Tract 109—See Tract 107.

Tract 108—See Tract 106.

Tracts 109 and 107—Part of the east (E.) fraction of the southeast quarter (S. E. $\frac{1}{4}$) of Section one (1), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Me-

ridian, containing twenty seven and ninety-three one-hundredths (27.93) acres. Purchased from the W. B. Ogden Estate, May 23rd, 1893, for \$315.00 per acre. See Tract 103.

Tract 106a—West (W.) fraction of the northeast quarter (N. E. $\frac{1}{4}$), north of the railroad, of Section Twelve (12), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing two and eighty-two one hundredths (2.82) acres. Purchased from Mary Prescott April 1st, 1893, for \$210.00 per acre. See Tract 99.

Tracts 108 and 106 — Part of the east (E.) fraction of the northeast quarter (N. E. $\frac{1}{4}$), north of railroad, of Section twelve (12), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing nine and twenty-two one-hundredths (9.22) acres. Purchased from the W. B. Ogden Estate, May 23rd, 1893, for \$315.00 per acre. See Tract 103.

Tract 105—Part of the west (W.) fraction of the northeast quarter (N. E. $\frac{1}{4}$) of Section twelve (12), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing thirty-nine and ninety-five one-hundredths (39.95) acres. Purchased from Philip Prescott, April 1st, 1893, for \$210.00 per acre. See Tract 99.

Tract 104—Part of the south (S.) fraction of the east one-half (E. $\frac{1}{2}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section twelve (12), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing seven and fifty-seven one-hundredths (7.57) acres. Purchased May 23, 1893, from the W. B. Ogden estate at \$315.00 per acre. See Tract 103.

Tract 103—South (S.) fraction of the west one-half (W. $\frac{1}{2}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section twelve (12), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing twenty and ten one-hundredths (20.10) acres. Purchased from the estate of Wm. B. Ogden, May 23, 1893, along with Tracts 104, 106, 107, 108, 109 and 110, containing in all sixty-eight and twenty-seven one-hundredths (68.27) acres at a price of \$315.00 per acre. The sum paid for the seven (7) tracts was \$21,496.00.

Tract 102a and 102—West one-half (W. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$), north of canal, of Section twelve (12), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal

Meridian, containing twenty-four and eighty one-hundredths (24.80) acres. East one half (E. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$), north of canal, of Section twelve (12), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing ten and fifty one-hundredths (10.50) acres. These two tracts were purchased from Moses J. Wentworth, April 8, 1893, for \$10,590.00 or \$300.00 per acre. These tracts adjoin the reserve of the Illinois and Michigan Canal.

Tract 101—Part of the north (N.) fraction of the northwest quarter (N. W. $\frac{1}{4}$) of Section twelve (12) Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing thirty-nine and eighteen one-hundredths (39.18) acres. Purchased April 1st, 1893, from Philip Prescott, for \$210.00 per acre. See Tract 99.

Tract 100—South (S.) fraction northwest quarter (N. W. $\frac{1}{4}$) of Section twelve (12), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing six and seventy-five one-hundredths (6.75) acres. Purchased April 29, 1893, from the estate of Geo. McConnell for \$1,417.50 or \$210.00 per acre.

Tract 99—Part of the north (N.) fraction of the southwest quarter (S. W. $\frac{1}{4}$) of Section twelve (12), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing thirty-four and ninety one-hundredths (34.90) acres. Purchased (along with Tracts 101, 105, 106a, 112 containing with Tract 99 in all 120 acres.) for \$25,200.00 from Philip and Mary Prescott, on April 1, 1893, being \$210.00 per acre.

Tract 98—Part of the south (S.) fraction of the southwest quarter (S. W. $\frac{1}{4}$) of Section twelve (12), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing forty-three and twenty one-hundredths (43.20) acres. Purchased from the Gamble Estate, May 25, 1893, for \$16,100.00 or \$375.00 per acre. This land fronts on the Lyons road.

Tract 98a—Part of the south (S.) fraction of the southwest quarter (S. W. $\frac{1}{4}$) of Section twelve (12), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing two (2) acres. Purchased from John Welbourn, March 18, 1893, for \$500.00 per acre. See Tract 76. This was a building lot fronting on the Lyons road, and

adjoining the Illinois and Michigan Canal reserve.

Tract 97—Part of the south (S.) fraction of the southwest quarter (S. W. $\frac{1}{4}$) of Section twelve (12), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing fifty-three and twenty-seven one-hundredths (53.27) acres. Purchased February 28, 1893, from Swift & Co. See Tract 82 and Schedule.

Tract 96—It was finally concluded that this tract was not needed.

Tracts 94 and 95—Part of Lots 3 and 4 in Subdivision of southeast fractional quarter (S. E. Frcl. $\frac{1}{4}$) of Section eleven (11), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing two and fifty one-hundredths (2.50) acres. Purchased from Jane S. Martin, April 29th, 1893, for \$1,400.00, or \$580.00 per acre.

This is stone land, quarries having been opened near.

Tract 93—Part of Lot five (5) in Subdivision of southeast fractional quarter (S. E. Frcl. $\frac{1}{4}$) of Section eleven (11), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing three and thirty-eight one-hundredths (3.38) acres. Purchased August 7th, 1893, from Thomas O'Connell, et al, for \$2,900.00, or \$859.00 per acre. This is also stone land, with better showing than the last tract.

Tracts 92a and 92—Part of Lot six (6) in Subdivision of southeast fractional quarter (S. E. Frcl. $\frac{1}{4}$) of Section eleven (11), Township thirty-eight (38) North, Range twelve (12), east of the Third Principal Meridian, containing twenty-seven and fifty one-hundredths (27.50) acres. Purchased April 14th, 1893, from Pat. and Edward Doud, for \$11,000.00, or \$400.00 per acre. This is stone land, but is situated farther from the developed quarries, and hence there was a sufficient element of uncertainty as to the amount of stone, to enable the District to secure better terms.

Tract 91—Southeast quarter (S. E. $\frac{1}{4}$) south of the River, of Section eleven (11), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing three and eighty-six one-hundredths (3.86) acres. Purchased from Swift & Co. See Tract 82 and Schedule.

Tract 90—Northwest quarter (N. W. $\frac{1}{4}$) north of the Canal, of Section thirteen (13), Township thirty-eight (38) North, Range twelve (12), East of the Third

Principal Meridian, containing twenty-six and seventy-eight one-hundredths (26.78) acres. Purchased from Swift & Co. See Tract 82 and Schedule.

Tracts 89a, 89b and 89c—Parts of the north fraction (N. Frac.) of the northeast quarter (N. E. $\frac{1}{4}$) of Section fourteen (14), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing seven and thirty-eight one-hundredths (7.38) acres. Purchased from Swift & Co. See Tract 82 and Schedule.

Tract 89—Part of the north fraction (N. frac.) of the northeast quarter (N. E. $\frac{1}{4}$) of Section fourteen (14), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing thirteen and seventy-nine one-hundredths (13.79) acres. Purchased from John Welbourn for \$550.00 per acre. See Tract 76.

Tract 88a—South (S.) part of the west one-half (W. $\frac{1}{2}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section fourteen (14), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing seven and sixty-five one-hundredths (7.65) acres. Obtained from John C. and James C. Burke, by condemnation proceedings. See Tract 78a.

Tract 88—Part of east fraction (E. frac.) of the northeast fractional quarter (N. E. frcl. $\frac{1}{4}$) of Section fourteen (14), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing one hundred and fourteen and forty-seven one-hundredths (114.47) acres. Purchased from Swift & Co. See Tract 83.

Tracts 87 and 87a—Not needed.

Tracts 86 and 86a—Northwest quarter (N. W. $\frac{1}{4}$), south of river, of Section fourteen (14), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing two and seventy-eight one-hundredths (2.78) acres. Purchased from Swift & Co. (see Tract 82 and Schedule) and John C. and James C. Burke. (See 78a post.)

Tract 85—East one-half (E. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) between Canal and railroad of Section fourteen (14), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing six and fifty one-hundredths (6.50) acres. Obtained April 8, 1893, from Moses J. Wentworth, by condemnation proceedings, the verdict being \$975.00 or \$150.00 per acre. There were on this tract several leaseholds.

Two of these were valuable as under them storehouses for powder had been erected; it being difficult to obtain land for this purpose.

The leasehold of John T. Allison was extinguished for \$1,375.00, and that of Wm. Cronin, for the same amount. The leasehold of Otis Graves, a farmer, was obtained for \$176.50.

Tract 84—West one-half (W. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) north of Canal of Section fourteen (14), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing fifty-four and eighty-two one-hundredths (54.82) acres. Obtained from John C. and James C. Burke, through condemnation proceedings. See Tract 78a and Schedule.

Tract 83a—Part of the south fraction (S. frac.) of the southeast quarter (S. E. $\frac{1}{4}$) between centre of river and government line, of Section fourteen (14), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing twelve and thirty one-hundredths (12.30) acres. Purchased from Swift & Co. See Tract 82 and Schedule.

Tract 83—Part of the southwest quarter (S. W. $\frac{1}{4}$) south of River, of Section fourteen (14), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing one hundred and three and fifty-three one-hundredths (103.53) acres. Obtained from John C. and James C. Burke, through condemnation proceedings. See Tract 78a and Schedule.

Tract 82—Southeast quarter (S. E. $\frac{1}{4}$), south of the River, of Section fifteen (15), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing one and ninety-one one-hundredths (1.91) acres. This tract was purchased March 1st, 1893, from Swift & Co., with Tracts 83a, 86a, 88, 89a, 89b, 89c, 90, 91 and 97, for the sum of \$110,000.00. This sum included payment for all interest in lands lying within the town of Lyons, Cook County, Illinois, and all buildings, improvements, railroad tracks, railroad bridge over the Illinois and Michigan Canal, loading platforms and fixed machinery located on said premises, the same constituting the ice plant used in the ice business carried on by them. It also includes payment for all rights of way, easements and ice privileges connected with said business, and damages for the destruction of said business. The following is a schedule of the ice plant:

Swift Ice Plant.—Ice house—Inside measurement, 215x28 feet—

One (1) tool house, east of ice house, 12x16 feet.

One (1) tool house (east of ice house), 12x7 feet.

Space between ice houses built up to be filled with ice (valuable for lumber).

Ice house—Inside measurement, 215x245x30 feet.

Elevator, 154 feet long, 24 feet wide.

One thousand six hundred feet of elevator chain.

Belting, shafting, gearing, etc.

One (1) power house, smoke stack, Blandy engine, 16x24 feet.

Steel boiler, 18 feet x 50 inches, cased in brick.

One (1) Worthington supply pump, 6x4x6 feet, double action, connections complete.

Boarding house, 97x20 feet, with "L," 20x54 feet.

Bunks, tables, benches, etc., in boarding house.

Two (2) wells.

One (1) pump.

One (1) barn, 30x32 feet, one story, basement and attic.

One (1) oil house, 12x16 feet.

One (1) blacksmith shop with forge and bellows.

One (1) leading platform, 700 feet long.

One hundred and fifty feet of conveyor chains.

One (1) power house, two stories high.

One (1) Blandy engine, 10x20 feet.

One (1) steel boiler cased in brick.

One (1) smoke stack and gearings.

Elevator chains and slide.

One (1) feed pump (at boarding house).

One (1) power house for pumping water into pond.

One (1) Blandy engine, 14x24 feet.

One (1) smoke stack.

One (1) steam boiler cased in brick, 4x14 feet.

One (1) large pump wheel, shafting and pulleys.

Six hundred and twenty feet of rail road track and bridge.

Tract 81—Northeast quarter north of Canal of Section twenty-three (23), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing thirteen one hundredths (.13) acres. Purchased from Dolese & Shepard, February 31, 1893, for \$13.00 or \$100.00 per acre.

Tract 80—Northwest quarter (N. W. $\frac{1}{4}$) north of Canal of Section twenty-three (23), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing one hundred and six and forty-six one-hundredths (106.46) acres. Obtained by condemnation proceedings from John C. and James C. Burke. See Tract 78a.

Tract 79—See Tract 76.

Tract 78a—Part of the east fraction (E. frac.) of the northeast quarter (N. E. $\frac{1}{4}$) east of the government line, of Section twenty-two (22), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian. This Tract (together with Tracts 80, 83, 84, 86 and 88a) was obtained by condemnation proceedings from John C. and James C. Burke. The verdict rendered February 18th, 1893, was for \$45,750.00 for the whole three hundred and four and nineteen one-hundredths (304.19) acres, being an average price of \$150.00 per acre for all the tracts taken. Defendants took an appeal to the Supreme Court of the State where the decision of the lower court was sustained. An application for a rehearing was denied.

Tract 78—Part of the east fraction (E. Frac.) of the northeast quarter (N. E. $\frac{1}{4}$) of Section twenty-two (22), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing fifteen and ninety one-hundredths (15.90) acres. Purchased from Julia E., Seth and Thomas Piper. See Tract 59.

Tract 77—Part of the northeast quarter (N. E. $\frac{1}{4}$) of Section twenty-two (22), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing forty-seven and twenty-one one-hundredths (47.21) acres. Purchased from John L. Henry. See Tract 65.

Tracts 76 and 79—Southwest quarter (S. W. $\frac{1}{4}$), north of Canal, of Section twenty-three (23), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing nine and thirty-nine one-hundredths (9.39) acres. Part of the southeast quarter (S. E. $\frac{1}{4}$) between Canal and

River, of Section twenty-two (22), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing twenty (20) acres. These two tracts containing twenty-nine and thirty-nine one-hundredths (29.39) acres, were purchased March 18, 1893, with tracts 98a and 89, containing two (2), and thirteen and seventy-nine one-hundredths (13.79) acres respectively, from John Welbourn, for \$16,712.00. The purchase was for a lump sum, but the acreage prices of the tracts were figured as follows: Tracts 76 and 79, \$250.00 per acre; Tract 98a, \$500.00 per acre; Tract 89, \$550.00 per acre.

Tract 75—Part of the southeast quarter (S. E. $\frac{1}{4}$), between Canal and river, of Section twenty-two (22), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing thirty-seven and one one-hundredths (37.01) acres, was included in the purchase from Julia E., Seth and Thos. Piper. See Tract 59.

Tracts 73 and 74—Part of the southwest quarter (S. W. $\frac{1}{4}$) of Section twenty-two (22), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing fifty-four and thirty-two one-hundredths (54.32) acres. Part of the southeast quarter (S. E. $\frac{1}{4}$) west of the river of Section twenty-two (22), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing sixty-eight and nineteen one-hundredths (68.19) acres. These tracts having a total acreage of one hundred and twenty-two and fifty-one one-hundredths (122.51) acres were obtained by condemnation proceedings, from Wilson Ames. The verdict, February 18, 1893, was for \$80,627.59; \$250.00 per acre for property taken and \$4,775.00 for damages to lands not taken.

Tracts 72 and 71—Part of the northeast quarter (N. E. $\frac{1}{4}$) north of Canal of Section twenty-seven (27), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing twenty-eight and thirteen one-hundredths (28.13) acres, was included in the purchase from Julia E., Seth and Thos. Piper. See Tract 59.

Tract 70—See Tract 63.

Tract 69—Fraction of the northwest quarter (N. W. $\frac{1}{4}$) between Canal and river of Section twenty-seven (27), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing thirteen and fifty one-hundredths (13.50) acres, was

included in purchase from Julia E., Seth and Thos. Piper. See Tract 59.

Tracts 68 and 70—North fraction (N. frac.) of the southwest quarter (S. W. $\frac{1}{4}$) of Section twenty-seven (27), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing twenty-three and twelve one-hundredths (23.12) acres. Part of the north fraction (N. frac.) of the northwest quarter (N. E. $\frac{1}{4}$) of Section twenty-seven (27), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing one hundred and twenty-three and three one-hundredths (123.03) acres. These two tracts were obtained by condemnation proceedings from John A. Cook. The verdict, April 14th, 1893, was for \$43,845.00 for the land; being \$300.00 per acre, and \$1,575.60 for the buildings and improvements thereon. The latter sum is still in litigation, the District claiming it as grantee under the deed from the Pipers, to whom it formerly belonged.

Tract 67—Fraction of the southwest quarter (S. W. $\frac{1}{4}$), between Canal and River, of Section twenty-seven (27), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing twenty-seven and fifty-seven one-hundredths (27.57) acres. Was included in the purchase from Julia E., Seth and Thomas Piper. See Tract 59.

Tracts 66, 65 and 77—Part of the north fraction (N. Frac.) of the southeast quarter (S. E. $\frac{1}{4}$) of Section twenty-eight (28), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing one hundred and thirteen and eighty-one one-hundredths (113.81) acres. Part of the southeast quarter (S. E. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section twenty-eight (28), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing twenty and thirty-three one-hundredths (20.33) acres. Part of the northeast quarter (N. E. $\frac{1}{4}$) of Section twenty-two (22), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing forty-seven and twenty-one one-hundredths (47.21) acres. These three tracts, having an aggregate acreage of 181.35 acres, were purchased from John L. Henry November 28th, 1892, for \$20,000.00, being an average price of \$110.50, per acre. Henry reserved the right to cut trees on the property conveyed, and also a right of way in Section twenty-two (22), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian. He also

conveyed to the District a right of way in Section twenty-eight (28), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian.

Tract 64—Southeast quarter (S. E. $\frac{1}{4}$) of Section twenty-eight (28), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, between Canal and river, containing fifteen and thirty-five one-hundredths acres, was included in purchase from Julia E., Seth and Thos. Piper. See Tract 59.

Tract 63—Part of the southeast quarter (S. E. $\frac{1}{4}$) of the southwest quarter (S. W. $\frac{1}{4}$) of Section twenty-eight, Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing nine and sixty-four one-hundredths (9.64) acres. Purchased December 9, 1892, from Wm. Koeller, for \$1,150.00 or \$120.00 per acre.

Tract 62—North fraction (N. frac.) of the northeast quarter (N. E. $\frac{1}{4}$) of Section thirty-three (33), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing thirteen and forty-six one-hundredths (13.46) acres, was included in Griffin & Connolly purchase. See Tract 22.

Tract 61—Part of the south fraction (S. frac.) of the northeast quarter (N. E. $\frac{1}{4}$), north of Canal, of Section thirty-three (33), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing nineteen and seventy-three one-hundredths (19.73) acres, was included in purchase from Julia E., Seth and Thos. Piper. See Tract 59.

Tract 60—Part of the north fraction (N. frac.) of the northwest quarter (N. W. $\frac{1}{4}$) of Section thirty-three (33), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing sixty-seven and twenty-one one-hundredths (67.21) acres, was obtained by condemnation proceedings, from Ellen E. Yore, verdict returned April 14, 1893, for \$6,802.50 or \$250.00 per acre.

Tract 59—South fraction (S. frac.) of the northwest quarter (N. W. $\frac{1}{4}$), north of Canal, of Section thirty-three (33), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing twenty-eight and sixty-one one-hundredths (28.61) acres. Purchased with Tracts 61, 64, 67, 69, 71, 72, 75 and 78, and certain tax titles, rights in buildings, rights of way and leases from Julia E., Seth and Thomas Piper,

on December 12, 1892, for \$110,000.00. The purchase included in addition to the tracts of land mentioned the conveyance of all interest in any leases or leasehold estates on the Desplaines River, between Willow Springs and Summit, also of all interest in any bridges over the Illinois and Michigan Canal, and particularly in a railroad bridge over said canal connecting with the Chicago and Alton Railroad, together with the railroad switch track, and right of way and all tracks, ice houses and buildings located on the lands conveyed. This purchase, in like manner as that from Swift & Co., necessarily resulted in the entire removal of an established ice business from the Desplaines Valley.

The following schedule of buildings and appurtenances included in the ice plant.

A. S. PIPER & CO., ICE PLANT.

Ice House No 1.—

Inside measurement, 117x203x33 feet.

Shed adjoining, 35x109x33 feet.

Five hundred feet of chain platform.

One hundred and thirty-five feet of elevator shaft.

Brownell engine and boiler, 10x18 feet

One (1) story house, 20x30 feet.

Two (2) story boarding house, ceiled inside, eight large tables and benches.

One (1) large meat box.

One (1) old barn.

One (1) old shed.

Ice House No. 2.—

Inside measurement, 132x190x30 feet.

One (1) 135 feet elevator.

One hundred and thirty-two feet elevator slide.

Two hundred feet connecting slide.

Nine hundred and twenty-eight feet car-loading platform.

Two hundred feet of shafting.

Engine house, 30x40 feet.

Tool house, 16x24 feet, two (2) stories.

Ice House No. 3.—

Inside measurement, 80x194x20 feet.

Stable, 30x30 feet (very old).

Two (2) end sheds.

Boarding house, 30x40 feet, 1½ stories (very old).

Ice House No. 4—

Inside measurement, 78x200x28 feet.

Stable, 32x60 feet, two (2) stories high.

Ice House No. 5—

Inside measurement, 240x150x34 feet.

Elevator and conveyor, 240 feet.

Engine, boiler and dynamo building, 20x40 feet, with machinery.

Three hundred and fifty feet loading platform.

Oil house and shed adjoining.

Store house and shed adjoining.

Tool house.

Railroad bridge and tracks.

In connection with this ice house there were an engine, boiler, dynamo and much shafting.

Ice House No. 6—

Inside measurement, 146x200x28 feet.

Two (2) story boarding house, 40x22 feet, with "L" 16x12 feet.

Tracts 58 and 57—Lot one (1) in Subdivision of the southwest quarter (S. W. ¼), between Canal and river, of Section thirty-three (33), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing six and fifty-four one-hundredths (6.54) acres. Purchased from the Executors of George W. Beebe, deceased, April 1, 1895, for \$654.00, or \$100.00 per acre.

Tract 56—Lot two (2) in Subdivision of the southwest quarter (S. W. ¼), between Canal and river, of Section thirty-three (33), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing three and fifty one-hundredths (3.50) acres. Purchased from Thomas G. Beebe, January 11, 1893, for \$350.00, or \$100.00 per acre.

Tract 55—Lot three (3) in Subdivision of the southwest quarter (S. W. ¼), between Canal and river, of Section thirty-three (33), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing three and fifty one-hundredths (3.50) acres. Purchased January 23, 1893, from John J. Coburn for \$350.00, or \$100.00 per acre.

Tract 54—Lot four (4) in Subdivision of the southwest quarter (S. W. ¼), between Canal and river, of Section thirty-three (33), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing

three and fifty one hundredths (3.50) acres. Purchased from Arabella Sherwood, January 11, 1893, for \$350.00, or \$100.00 per acre.

Tract 53—Lot five (5) in Subdivision of the southwest quarter (S. W. $\frac{1}{4}$), between Canal and river, of Section thirty-three, Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian, containing three and forty one hundredths (3.40) acres, was obtained by condemnation proceedings, April 19, 1893, from Adeline E. Abbott, she being awarded \$340.00, or \$100.00 per acre.

Tract 52—Part of the southeast quarter (S. E. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section thirty-two (32), Township Thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian, containing two and fifty one hundredths (2.50) acres. Purchased March 16th, 1893, from Mary E. Savage, for \$250.00, or \$100.00 per acre.

Tract 51—Part of the southeast quarter (S. E. $\frac{1}{4}$), between Canal, river and road, of Section thirty-two (32), Township thirty-eight (38) North, Range twelve (12), East of the Third Principal Meridian. This is included in the Griffin & Connelly purchase. See tract 22.

Tracts 50, 48, 46 and 45—Northwest quarter (N. W. $\frac{1}{4}$), between river and Canal, of Section five (5), Township Thirty-seven (37) North, Range twelve (12), East of the Third Principal Meridian.

Part of the southeast quarter (S. E. $\frac{1}{4}$) of Section thirty-two (32), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian.

Part of the northeast quarter (N. E. $\frac{1}{4}$), north of Canal, of Section five (5), Township thirty-seven (37) North, Range twelve (12) East of the Third Principal Meridian.

Part of the southeast quarter (S. E. $\frac{1}{4}$) of Section thirty-two (32), Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian.

These four tracts were condemned in one suit. For thirty-four (34) acres of Tracts 45, 46 and 48, comprising the Willow Springs picnic grounds, the jury awarded \$13,600.00, or \$400.00 per acre, and for the remaining fifty-seven (57) acres the sum of \$10,260.00, or \$180.00 per acre.

Tract fifty (50) contains four (4) acres, for which \$700.00 was awarded, being \$175.00 per acre.

An appeal was taken from this judg-

ment, and a strong effort was made on grounds which seemed to the Attorneys of the Board sufficient to have the decision reversed, but to no avail.

For the picnic buildings and leasehold interest in the picnic grounds, George Edmanson was paid \$4,500.00.

Tract 47—Omitted, was not needed.

Tract 49—Decided to be not needed.

Tract 44—Part of the northwest quarter (N. W. $\frac{1}{4}$) of Section five (5), Township thirty-seven (37) North, Range twelve (12) East of the Third Principal Meridian, containing fifty (50) acres, was acquired by condemnation proceedings from the Columbia Park Co., November 15, 1892, for \$7,500.00, or \$150.00 per acre.

Tracts 43 and 43a—Southwest quarter (S. W. $\frac{1}{4}$), north of Canal, of Section five (5), Township thirty-seven (37) North, Range twelve (12) East of the Third Principal Meridian, containing thirty and two one hundredths (30.02) acres, was included in the Griffin & Connelly purchase. See Tract 22.

Tract 42—See Tract 36.

Tract 41—Lots 1 and 2 of Carrington's Subdivision of south one-half (S. $\frac{1}{2}$) of Section six (6), Township thirty-seven (37) North, Range twelve (12) East of the Third Principal Meridian, and the east thirty-three (33) feet of Tract 42 ante, containing thirty (30) acres; was acquired from E. F. Cullerton on December 19, 1892, by condemnation for \$6,180, or \$206 per acre. This tract was included in the same suit as Tracts 45, 46, 48 and 50.

Tract 40—See Tract 36.

Tract 39—See Tract 37.

Tract 38—Part of the south fraction (S.) of the southeast quarter (S. E. $\frac{1}{4}$) of Section six (6), Township thirty-seven (37) North, Range twelve (12) East of the Third Principal Meridian (being Lot five (5) of the County Clerk's Division). Purchased October 2, 1892, from James Griffin. It contains twenty-three and fifty-three one hundredths (23.53) acres, and cost \$1,764.75 or \$75.00 per acre.

Tracts 37 and 39—South fraction (S.) of the southwest quarter (S. W. $\frac{1}{4}$), between Canal and river, and part of the south (S.) fraction of the southeast quarter (S. E. $\frac{1}{4}$), between river and Canal, of Section six (6), Township thirty-seven (37) North, Range twelve (12) East of the Third Principal Meridian, were included in the Griffin & Connelly purchase. See Tract 22.

Tracts 36, 40 and 42—Part south of the railroad of Lots 4 and 5 of Carrington's Subdivision of the south one-half of Section six (6), Township thirty-seven (37) North, Range twelve (12) East of the Third Principal Meridian. Part south of the railroad of Lot 3 of Carrington's Subdivision of the south one-half (S. $\frac{1}{2}$) of Section six (6), Township thirty-seven (37) North, Range twelve (12) East of the Third Principal Meridian. Part of the northeast quarter (N. E. $\frac{1}{4}$) south of railroad of Section six (6), Township thirty-seven (37) North, Range twelve (12) East of the Third Principal Meridian.

These three tracts, containing in all forty-eight and thirty-seven one-hundredths (48.37) acres, were acquired October 26, 1893, by condemnation proceedings, from John Tiedt, for \$6,159.50, or \$127.50 per acre.

Tract 35—Part south of railroad of Lot eleven (11) of Carrington's Subdivision of the south one-half (S. $\frac{1}{2}$) of Section six (6), Township thirty-seven (37) North, Range twelve (12) East of the Third Principal Meridian, containing thirteen and nineteen one-hundredths (13.19) acres, was acquired from Henry F. Tiedt, by condemnation, October 26, 1892, for \$1,319.00 or \$100.00 per acre.

Tracts 34 and 33—These tracts were not needed.

Tract 32—Lot twelve (12) of Carrington's Subdivision of the south one-half (S. $\frac{1}{2}$) of Section six (6), Township thirty-seven (37) North, Range twelve (12) East of the Third Principal Meridian, containing thirteen and sixty-six one-hundredths (13.66) acres. Purchased August 26, 1892, from N. Starr Carrington, for \$1,025.00, or \$75.00 per acre.

Tract 31—This tract comprises Lots 1, 2, 3 and 4 of the Subdivision of Lot 13 of Carrington's Subdivision of part of the south one-half (S. $\frac{1}{2}$) of Section six (6), Township thirty-seven (37) North, Range twelve (12) East of the Third Principal Meridian.

The property was condemned and verdict was returned on October 26, 1892, as follows:

Lot 1, containing five and twenty-one one-hundredths (5.21) acres, owned by Samuel A. Spry, \$521.00, or \$100.00 per acre.

Lot 2, containing three and eighty one-hundredths (3.80) acres, same owner, \$380.00, or \$100.00 per acre.

Lot 3, containing four and six one-hundredths (4.06) acres, same owner, \$406.00, or \$100.00 per acre.

Lot 4, containing three and eighty-five one-hundredths (3.85) acres, owned by Fred Klotz, \$2,000.00. This sum, however, includes compensation for house and improvements.

Tracts 30 and 29—Northwest quarter (N. W. $\frac{1}{4}$) north of Canal of Section seven (7), Township thirty-seven (37) North, Range twelve (12) East of the Third Principal Meridian, containing seventeen and thirty-seven one-hundredths (17.37) acres, was acquired October 26, 1892, by condemnation from Fred Kusch for \$863.50, or \$50.00 per acre.

Tracts 28 and 27—These were small points of land, which seemed to come within the District right of way, but on survey fell outside.

Tracts 26 and 25—South fraction (S. frac.) of the northwest quarter (N. W. $\frac{1}{4}$) of Section twelve (12), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, and south fraction of the northeast quarter (N. E. $\frac{1}{4}$), north of Canal, of Section twelve (12), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing one hundred and fifty (150) acres. Purchased from Philip Koch on July 28, 1892, for \$15,000.00, or \$100.00 per acre. This was cultivated land, higher than the adjoining tracts. There was also some urgency in acquiring it speedily that contractors might enter upon their contracts.

Tract 24—Northeast quarter (N. E. $\frac{1}{4}$) of the southwest quarter (S. W. $\frac{1}{4}$), north of Canal, of Section twelve (12), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing fourteen and twenty-one one-hundredths (14.21) acres, was acquired October 26, 1892, by condemnation from James Murphy for \$710.50, or \$50.00 per acre.

Tracts 23a, 23b, 23c—Southwest quarter (S. W. $\frac{1}{4}$) of the southwest quarter (S. W. $\frac{1}{4}$), north of Canal, of Section twelve (12), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing three and forty-five one-hundredths (3.45) acres, was secured October 26, 1892, by condemnation, for \$172.50, or \$50.00 per acre.

Tract 23—Northwest quarter (N. W. $\frac{1}{4}$) of the southwest quarter (S. W. $\frac{1}{4}$), between Canal and river, of Section twelve (12), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing thirty-eight

and fifty-six one-hundredths (38.56) acres, was acquired November 19, 1892, by condemnation, from Wright & McCulloch for \$2,313.60, or \$60.00 per acre.

Tract 22--South fraction (S. frac.) of the Southeast quarter S. E. $\frac{1}{4}$ of Section eleven (11), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing sixty-two and fifty-five one-hundredths (62.55) acres. Purchased from Griffin & Connelly on November 2, 1892 (with Tracts 37, 39, 43, 43a, 51 and 62, and certain leases, buildings and rights) for \$90,000. Owing to the defective description in a deed given in 1871, there is a claim still undetermined as to a portion of this land. This purchase included all right, title and interest in and to any leasehold interests and ice privileges held by them in the bed of the Desplaines River, in and to ice formed upon the water of said

river, and in and to any leasehold interests in the lands bordering said river, between the villages of Summit and Lemont, in Cook County. Also all interests in any bridges over the Illinois and Michigan Canal, and particularly all interests in and to a railroad bridge over said Canal, connecting land in the southeast quarter (S. E. $\frac{1}{4}$) of Section eleven (11), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, with the Chicago and Alton Railroad, together with right-of-way thirty feet wide and railroad tracks and switches thereon.

The following schedules show the leasehold interests and the respective ice plants acquired by the District. The timber on Tracts 42 and 22 was owned by George Wiener, to whom was awarded by the jury \$650 therefor.

SCHEDULE OF GRIFFIN & CONNELLY'S LEASEHOLDS.

County and Tract No.	LAND.	Section.	Township.	Range.	Lease Expires.
25, Cook....	S. frac. N. W. $\frac{1}{4}$	12	37	11	Oct. 11, 1897
26, Cook....	N. E. $\frac{1}{4}$, bet. Canal and river.....	12	37	11	Oct. 11, 1897
31, Cook....	Lot 13, in Sub. of S. $\frac{1}{2}$	6	37	12	Sept. 13, 1899
32, Cook....	Lot 12, in Sub. of S. $\frac{1}{2}$	6	37	12	Year to year
35, Cook....	Lot 11, in Sub. of S. $\frac{1}{2}$	6	37	12	Feb. 17, 1896
36, Cook....	Lot 5, in Sub. of S. $\frac{1}{2}$	6	37	12	Dec. 1, 1900
38, Cook....	Lot 5, Boyer's Sub. S. frac., S. E. $\frac{1}{4}$	6	37	11	Oct. 2, 1896
40, Cook....	Lot 3, in Sub. of S. $\frac{1}{2}$	6	37	12	Year to year
41, Cook....	Lots 1 and 2, in Sub. of S. $\frac{1}{2}$	6	37	12	Year to year
47, Cook....	S. W. $\frac{1}{4}$, bet. river and railroad.....	32	38	12	Year to Year
19, Du Page	Pt. E. $\frac{1}{2}$, S. E. $\frac{1}{4}$, N. of river.....	11	37	11	Jan. 1, 1896
26, Du Page	Lot 1, Sub. of S. $\frac{1}{2}$	1	37	11	Oct. 1, 1893
—, Du Page	Pt. N. frac., S. E. $\frac{1}{4}$	11	37	11	Jan. 15, 1896
—, Du Page	Pt. N. frac., N. W. $\frac{1}{4}$	12	37	11	Dec. 1, 1892
—, Du Page	Pt. N. frac.....	12	37	11	Dec. 15, 1897

GRIFFIN & CONNELLY'S PLANT.

Plant No. 1—

Five (5) ice houses, each 40x230x27 feet; two-story boarding house, 120x60 feet, barn and out-houses.

Plant No. 2—

Four (4) ice houses, each 40x230x27 feet

Plant No. 3—

Four (4) ice houses, each 40x230x27 feet; two story boarding house, 120x60 feet.

Plant No. 4—

Six (6) ice houses, each 40x230x27 feet;

two-story boarding house, 120x60 feet; two-story barn, 20x50 feet; wagon shed sixty feet long; out-houses.

Note—Connected with these plants are one and one-half ($1\frac{1}{2}$) miles of railroad track and an iron bridge over the Illinois and Michigan Canal. Under the various ice houses and in the railroad tracks there are 140,000 cubic yards of grading.

Tract 21—Part of the northeast quarter (N. E. $\frac{1}{4}$), north of Canal, of Section fourteen (14), Township thirty-seven (37) North, Range eleven (11) East of the Third Meridian, containing nine and eighty-two one-hundredths (9.82) acres. Purchased from Jno. McNab and Enter-

prise Stone Company, October 10, 1892, for \$491.00 or \$50.00 per acre.

Tract 20—This tract is not acquired.

Tract 19—Part of the south one-half (S. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$), south of river, of Section fifteen (15), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing two and fifty one-hundredths (2.50) acres, was acquired, September 21st, 1892, by condemnation, from Ono Earnshaw et al. for \$25.00, or \$10.00 per acre. This was river bottom.

Note—The lands on Sag Island intervene between this and the following tract number. These lands fall in DuPage County, and are given separate tract numbers from 1 to 19. See DuPage County list.

Tract 18—Part of the north one-half (N. $\frac{1}{2}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section twenty-one (21), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing thirty-two and fifty one hundredths (32.50) acres. Purchased from the Western Stone Co., July 27, 1892. See Tract 5.

Tracts 17 and 16—Part of the south fraction (S. frac.) of south one half (S. $\frac{1}{2}$) of Section sixteen (16), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing Sixteen and sixty-six one-hundredths (16.66) acres, was acquired September 21, 1892, by condemnation from J. H. Tedens for \$1,000.00, or \$60.00 per acre.

Tracts 15 and 15a—Part of the south fraction of the northwest quarter (N. W. $\frac{1}{4}$) of Section twenty-one (21), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, and part of the north fraction of the northwest quarter (N. W. $\frac{1}{4}$) of Section twenty-one (21), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing ninety-seven and sixty-eight one-hundredths (97.68) acres, was acquired by condemnation from the Illinois Stone Company for \$9,768.00 or \$100.00 per acre.

Tract 14—It was decided that this tract was not needed.

Tract 13—Part of Lots 1 and 2, Singer & Talcott's Subdivision of the west half (W. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of Section twenty (20), Township thirty-seven (37) North, Range eleven (11) East

of the Third Principal Meridian, containing four and fifty-two one-hundredths (4.52) acres, purchased from the Western Stone Company, July 27, 1892. See Tract 5.

Tract 12a—Part of the north fraction of the northeast quarter (N. E. $\frac{1}{4}$) of Section twenty (20), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, purchased July 27, 1892, from the Western Stone Company; contains fifty-seven and fifty-six one-hundredths (57.56) acres. See Tract 5.

Tract 12—South fraction of the northeast quarter (N. E. $\frac{1}{4}$) of Section twenty (20), Township thirty-seven (37) North, Range eleven (11), East of the Third Principal Meridian, containing fifty-two and thirty-four one-hundredths (52.34) acres. Purchased July 27, 1892, from the Western Stone Co. See Tract 5.

Tract 11—Not acquired.

Tract 10—Part of the southwest quarter (S. W. $\frac{1}{4}$), between railroad and river, of Section twenty (20), Township thirty-seven (37) North, Range eleven (11), East of the Third Principal Meridian, containing seven and fifty one-hundredths (7.50) acres, purchased August 10, 1892, from N. J. Brown, with Tracts 2, 3, 7 and 9, at an average price of \$75.00 per acre.

Tract 9—North fraction of the southwest quarter (S. W. $\frac{1}{4}$) of Section twenty (20), Township thirty-seven (37), Range eleven (11), East of the Third Principal Meridian, containing sixty and thirty-five one-hundredths (60.35) acres, purchased August 10, 1892, from N. J. Brown, with Tracts 2, 3, 8, 7 and 10, at an average price of \$75.00 per acre.

Tract 8b—Part of the northeast quarter (N. E. $\frac{1}{4}$), northwest quarter (N. W. $\frac{1}{4}$), and northwesterly part of northeast quarter (N. E. $\frac{1}{4}$) of Section twenty (20), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing forty-two and twenty-one one-hundredths (42.21) acres. Purchased September 16, 1893, from the Western Stone Company, for \$4,090.00, being \$95.00 per acre.

Tract 8—Southeast quarter (S. E. $\frac{1}{4}$) of the northwest quarter (N. W. $\frac{1}{4}$) of Section twenty (20), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing forty (40) acres. Purchased from the Western Stone Company. See Tract 5.

Tract 7—Part of the southwest quarter (S. W. $\frac{1}{4}$) of the northwest quarter (N. W. $\frac{1}{4}$) of Section twenty (20), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing twenty-seven and twenty-seven one-hundredths (27.27) acres. Purchased August 10, 1892, from N. J. Brown, with Tracts 2, 3, 6, 9 and 10, at an average price of \$75.00 per acre.

Tract 6—Part of the southeast fractional quarter (S. E. $\frac{1}{4}$) of Section nineteen (19), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing about ninety (90) acres. Purchased August 10, 1892, from N. J. Brown, with Tracts 2, 3, 7, 9 and 10, at an average price of \$75.00 per acre.

Tract 5—Part of the south half (S. $\frac{1}{2}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section nineteen (19), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing forty (40) acres. Purchased July 27, 1893, with other lands, from the Western Stone Company. The land acquired aggregated three hundred and twenty-eight (328) acres owned by said company, in connection with its business of quarrying stone. The lands were Tract Nos. 5, 8, 12, 12a, 13 and 18, in Cook County, No. 2 in Du Page County, and Nos. 1 and 4 in the County of Will. For these lands and in settlement of all claims for damage to lands not taken, and to the business of said company, the District paid \$76,150.00, and also gave a lease of certain areas abutting upon the new Channel, when completed, to give said company access to said Channel. The agreement with said company and the lease are set out on page 643, et seq., of the Proceedings of the Board.

Tract 4—Part of the east one-half (E. $\frac{1}{2}$) of the Northwest quarter (N. W. $\frac{1}{4}$) of Section thirty (30), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing about one-half on acre. This was acquired in condemnation proceedings as to certain defendants, for \$25.00. Claim to the land is made by other parties not defendants.

Tract 3—Part of the west half (W. $\frac{1}{2}$) of the northwest quarter (N. W. $\frac{1}{4}$) of Section thirty (30), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing thirteen and ninety one-hundredths (13.90) acres. Purchased August 10, 1892, from N. J. Brown (with Tracts 2, 6, 7, 9 and 10), at an average price of \$75.00 per acre.

Tract 2—Part of the south fraction of the southwest quarter (S. W. $\frac{1}{4}$) of Section nineteen (19), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing sixty-one and ninety-four one-hundredths (61.94) acres. Purchased August 10, 1892, from N. J. Brown with Tracts 3, 6, 7, 9 and 10 at an average price of \$75.00 per acre. The aggregate of the lands purchased from Mr. Brown is \$19,511.25.

Tract 1—Part of the north fraction of the southwest quarter (S. W. $\frac{1}{4}$) of Section nineteen (19), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian. Purchased August 16, 1892, from E Spencer Sturges, eighty (80) acres for \$6,000.00, being \$75.00 per acre.

DU PAGE COUNTY.

Tract 1—That part of the southeast quarter (S. E. $\frac{1}{4}$) of Section sixteen (16), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, south of the center thread of the Desplaines River, containing twenty-two and forty four one-hundredths (22.44) acres, was purchased from John H. Tedens and John Thormahlen, November 14, 1894. See Tract 7.

Tract 1a—Part of the south half (S. $\frac{1}{2}$), north of the river, of Section sixteen (16), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing seventy and thirteen one-hundredths (70.13) acres. Purchased from John H. Tedens and John Thormahlen, April 22, 1893, for \$5,965.30, or \$85.00 per acre.

Tract 2—Part of the south fraction of the southwest fractional quarter (S. W. $\frac{1}{4}$) of Section fifteen (15), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing twenty (20) acres, was purchased from the Western Stone Co. See Tract 5 of Cook County.

John Nagle had a lease of these premises when the property was acquired, and failing to reach a settlement his interest was condemned, the verdict being for \$210.00, and on Tracts 5 and 10 for \$50.00 each, or \$310.00 in all. We finally settled for \$210.00.

Tract 3—The south fraction of the southwest fractional quarter (S. W. $\frac{1}{4}$) of Section fifteen (15), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, except Tract 2, containing seventy and sixteen one-hundredths (70.16) acres, This

tract, together with Tracts 1, 4, 5, 6, 7, 7a, 8, 10, 12, 14 and 15, were included in the condemnation suit for lands on Sag Island, being the case of Sanitary District of Chicago vs. John H. Tedens, et al, No. 3217, in the Circuit Court of Du Page County.

The verdict of the jury for the different tracts ranged from \$25.00 to \$100.00 per acre, according to the location and the nature of the soil. For the river bed, nominal sums were given. An appeal was taken by defendants, Tedens, Mall and Lomax, and the judgment was reversed by the Supreme Court, not on the ground of an insufficient valuation, but because the jury viewed other lands, because the plans showing the nature of the improvements contemplated were not furnished, and because of some of the remarks of the presiding Judge at the trial. Subsequently, an agreement was reached with John H. Tedens and John Thormahlen, for Tracts 1, 6, 7 and 7a, for the sum of \$7,000.00, being an additional \$1,776.57 to the amount awarded by the jury. This leaves yet undetermined the price to be paid for this tract and Tracts 4, 5, 8 and 10. The District has possession of the land.

Tract 3a—Part of the north fraction of the southwest quarter (S. W. $\frac{1}{4}$) of Section fifteen (15), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing thirty-two and twenty-two one-hundredths (32.22) acres. Purchased from Wm. J. Tewksbury, January 16, 1893, for \$2,094.30, or \$85.00 per acre.

Tract 4—West 157.08 feet of that part of the southeast quarter (S. E. $\frac{1}{4}$) of Section fifteen (15), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, lying north (N.) of the northerly boundary line of Illinois and Michigan Canal, containing five and seventeen one-hundredths (5.17) acres. Still undetermined. See Tract 3.

Tract 5—Part of that part of the southeast quarter (S. E. $\frac{1}{4}$) of Section fifteen (15), Township thirty-seven North, Range eleven (11) East of the Third Principal Meridian, lying north of the northerly reserve line of the Illinois and Michigan Canal, except the west 157.08 feet thereof, containing thirty-two (32) acres. Not yet determined. See Tract 3.

Tract 6—That part south of the river of the northwest quarter (N. W. $\frac{1}{4}$) of Section fifteen (15), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, con-

taining thirty-five one-hundredths (.35) acres. Included in the purchase from John H. Tedens and John Thormahlen. See Tract 3.

Tract 7—That part south of the Guard Bank of the northeast quarter (N. E. $\frac{1}{4}$) of Section fifteen (15), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing fifty-two and sixty-seven one-hundredths (52.67) acres. Included in Tedens purchase. See Tract 3.

Tract 7a—That part between the Guard Bank and the center thread of the river of the northeast quarter (N. E. $\frac{1}{4}$) of Section fifteen (15) Township thirty-seven (37) North, Range eleven (11), East of the Third Principal Meridian, containing eleven and seventeen one-hundredths (11.17) acres. Included in Teden's purchase. See Tract 3.

Tract 8—Part of the west 701.58 feet of the northwest fractional quarter (N. W. $\frac{1}{4}$) of Section fourteen (14), Township thirty-seven (37) North, Range eleven (11), East of the Third Principal Meridian, containing thirty-two and fifty-four one-hundredths (32.54) acres. See Tract 3.

Tract 9—This number was given to a point of land which seemed to be within the right of way, but the survey determined that it did not exist.

Tract 10—Part of the east (E.) 623.4 feet of the west half (W. $\frac{1}{2}$) of the northwest fractional quarter (N. W. $\frac{1}{4}$) of Section fourteen (14), Township thirty-seven (37) North, Range eleven (11), East of the Third Principal Meridian, containing thirty-one and ten one-hundredths (31.10) acres. See Tract 3.

Tract 11—The east half (E. $\frac{1}{2}$) of the northwest quarter (N. W. $\frac{1}{4}$), north of Canal, of Section fourteen (14), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing forty-four and thirty-two one-hundredths (44.32) acres, was obtained by condemnation proceedings from Sam'l W. Norton, September 1, 1892, the verdict of \$4,202.60 being divided as follows:

For the riparian rights, \$1.00.

For 23.04 acres north of Bracken Bank, \$2,073.60, or \$90.00 per acre.

For 12.21 acres south of Bracken Bank, \$2,128.00, or \$100.00 per acre.

Tract 12—That part of the northeast quarter (N. E. $\frac{1}{4}$) of Section fourteen (14), Township thirty-seven (37) North, Range eleven (11) East of the Third Prin'

cipal Meridian, between Bracken Bank and the county line, containing three and ninety one-hundredths (3.90) acres. See Tract 3.

Tract 13—Part of the east half (E. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$), north of river, of Section eleven (11), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing nine and forty-nine one-hundredths (9.49) acres. Purchased from Joachim Schiel, February 15, 1893, for \$711.75, or \$75.00 per acre.

Tract 14—The east half (E. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$), south of river, of Section eleven (11), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing eight and eighty-eight one-hundredths (8.88) acres, obtained by condemnation proceeding September 1, 1892, from the estate of C. E. Boyer, the verdict being for \$178.60, or \$26.00 per acre, and \$1.00 for riparian rights.

Tract 15—The west half (W. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$), south and west of river, of Section eleven (11), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing four and seventy-eight one hundredths (4.78) acres, was obtained by condemnation proceedings September 1, 1892, from Edwin Walker, the verdict being \$96.60, or \$20.00 per acre, and \$1.00 for riparian rights.

Tract 16—Part of the west half (W. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$), north of the river, of Section eleven (11), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing eleven and sixty-one one-hundredths (11.61) acres. Purchased from Aug. Hahn, February 15, 1893, for \$870.75, or \$75.00 per acre.

Tract 17—Part of the west five (W. 5) acres of the east ten (E. 10) acres of the west half (W. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of Section eleven (11), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing three and thirty-six one-hundredths (3.36) acres. Purchased from Magdalena Heintz, February 21, 1893, for \$252.00, or \$75.00 per acre.

Tract 18—The east five (5) acres of the west half (W. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of Section eleven (11), Township thirty-seven (37) North, Range eleven (11), East of the Third Principal Meridian, containing five (5) acres. Purchased from Jesse Oldfield, April 5, 1893, for \$450.00 or \$90.00 per acre.

Tract 19—Part of the north fraction of the east half (E. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of Section eleven (11), Township thirty-seven (37) North, Range eleven (11), East of the Third Principal Meridian, containing eighteen and nineteen one-hundredths (18.19) acres. Purchased from Jacob Beder, February 24, 1893, for \$1,364.25 or \$75.00 per acre.

Tract 20—Not acquired.

Tract 21—Part south of the railroad of Lot 6 in subdivision of the south half (S. $\frac{1}{2}$) of Section one (1), Township thirty-seven (37) North, Range eleven (11), East of the Third Principal Meridian, containing five (5) acres. Purchased from Charles Elfeldt, February 25, 1893, for \$385.00 or \$77.00 per acre.

Tract 22—Part south of the railroad of Lot 4 in subdivision of the south half (S. $\frac{1}{2}$) of Section one (1), Township thirty-seven (37) North, Range eleven (11), East of the Third Principal Meridian, containing ten (10) acres. Purchased of Herman Pantke, February 17, 1893, for \$750.00 or \$75.00 per acre.

Tract 23—West half (W. $\frac{1}{2}$), south of railroad, of Lot 3, in Subdivision of south half (S. $\frac{1}{2}$) of Section one (1), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing five (5) acres. Purchased from Emil Lindgren, September 20, 1892, for \$375.00, or \$75.00 per acre.

Tract 24—The east half (E. $\frac{1}{2}$), south of railroad, of Lot 3, in Subdivision of the south half (S. $\frac{1}{2}$) of Section one (1), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing five (5) acres. Purchased from John Panje, January 10, 1893, for \$375.00, or \$75.00 per acre.

Tract 25—Lot 2, south of railroad, in Subdivision of the south half (S. $\frac{1}{2}$) of Section one (1), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing two and fifty one-hundredths (2.50) acres. Purchased from James Craigmile, October 7, 1892, for \$187.50, or \$75.00 per acre.

Tract 26—Lot one (1), south of railroad, in Subdivision of south half (S. $\frac{1}{2}$) of Section one (1), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, containing five (5) acres. Purchased from Peter Craigmile, February 13, 1893, for \$475.00, or \$95.00 per acre.

WILL COUNTY.

Tracts 1 and 2—Part of the south one-

half (S. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of section twenty-four (24), Township thirty-seven (37) North, Range ten (10) East of the Third Principal Meridian, containing forty (40) acres. Purchased from Western Stone Company, on July 27, 1892. See Tract 5, Cook County.

Tract 3—The north fraction of the northeast quarter (N. E. $\frac{1}{4}$) of Section twenty-five (25), Township thirty-seven (37) North, Range ten (10) East of the Third Principal Meridian, containing fifty-six and twenty-five one-hundredths (56.25) acres, was obtained by condemnation proceedings from Michael Ray, June 24, 1892, the verdict being \$4,218.75, or \$75.00 per acre.

Tract 4—South fraction of the northeast quarter (N. E. $\frac{1}{4}$), north of railroad, of Section twenty-five (25), Township thirty-seven (37) North, Range ten (10) East of the Third Principal Meridian, containing thirty-two (32) acres. Purchased from the Western Stone Company, July 27, 1892. See Tract 5, Cook County.

Tract 5—South fraction of the northwest quarter (N. W. $\frac{1}{4}$), north of railroad right of way, of Section twenty-five (25), Township thirty-seven (37) North, Range ten (10) East of the Third Principal Meridian, containing forty-eight and twenty-one one-hundredths (48.21) acres, was obtained by condemnation proceedings, from Michael Ray, June 24, 1892, for \$3,615.75, or \$75.00 per acre.

Tract 5a—Part of the north fraction of the northwest quarter (N. W. $\frac{1}{4}$) of Section twenty-five (25), Township thirty-seven (37) North, Range ten (10) East of the Third Principal Meridian, containing seventy and fifty-eight one-hundredths (70.58) acres, was obtained by condemnation proceedings from Michael Ray, June 24, 1892, for \$5,293.50, or \$75.00 per acre.

Tract 6—The southwest quarter (S. W. $\frac{1}{4}$), north of railroad right of way, of Section twenty-five (25), Township thirty-seven (37) North, Range ten (10) East of the Third Principal Meridian, containing twenty-six and seventy one-hundredths (26.70) acres, was obtained by condemnation proceedings from Michael Ray, June 24, 1892, for \$2,002.50, or \$75.00 per acre.

Tracts 7 and 7a—The southeast quarter (S. E. $\frac{1}{4}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section twenty-six (26), Township thirty-seven (37) North, Range ten (10) East of the Third Principal Meridian, containing forty (40) acres, were

obtained by condemnation proceedings from N. J. Brown, June 24, 1892, with Tracts 8 and 8a, containing in all two hundred and three and forty-seven one-hundredths (203.47) acres. The verdict was \$11,190.85, or \$55.00 per acre.

Tracts 8 and 8a—The southeast quarter (S. E. $\frac{1}{4}$), north of railroad right of way, of Section twenty-six (26), Township thirty-seven (37) North, Range ten (10) East of the Third Principal Meridian, containing one hundred and sixty-three and forty-seven one-hundredths (163.47) acres, was obtained by condemnation proceedings from N. J. Brown, June 24, 1892, with Tracts 7 and 7a. The verdict was \$55.00 per acre.

Tracts 9 and 9a—Part of the southeast quarter (S. E. $\frac{1}{4}$) of the southwest quarter (S. W. $\frac{1}{4}$) of Section twenty-six (26), Township thirty-seven (37) North, Range ten (10) East of the Third Principal Meridian, containing thirty-five and eight one-hundredths (35.08) acres. Purchased from A. S. Alderman, June 27, 1892, for \$376.00, or \$25.00 per acre.

Tract 10—The northeast quarter (N. E. $\frac{1}{4}$), north of railroad right of way, of Section thirty-five (35), Township thirty-seven (37) North, Range ten (10) East of the Third Principal Meridian, containing thirty-six and ninety-eight one-hundredths (36.98) acres, was obtained by condemnation proceedings from Chris. Korrell, June 24, 1892. The verdict of \$2,403.70, being at the rate of \$65.00 per acre.

Tract 11—The northwest quarter (N. W. $\frac{1}{4}$), between the railroad right of way and river, of Section thirty-five (35), Township thirty-seven (37) North, Range ten (10) East of the Third Principal Meridian, was obtained by condemnation proceedings from Chris. Korrell, June 24, 1892. The verdict of \$5,236.40 was at the rate of \$65.00 per acre for eighty and fifty-six one-hundredths (80.56) acres.

Tract 11a—The north fraction of the northwest quarter (N. W. $\frac{1}{4}$) of Section thirty-five (35), Township thirty-seven (37) North, Range ten (10) East of the Third Principal Meridian, was obtained by condemnation proceedings from Chris. Korrell, June 24, 1892. The tract contains seventy-eight and ninety-six one-hundredths (78.96) acres, and the verdict of \$5,132.40 was at the rate of \$65.00 per acre.

Tract 12—Part of the southwest quarter (S. W. $\frac{1}{4}$), between the railroad right of way and river, of Section thirty-five

(35), Township thirty-seven (37) North, Range ten (10) East of the Third Principal Meridian, containing one hundred and fifteen and forty-three one-hundredths (115.43) acres, was obtained by condemnation proceedings from Chris. Korrell, June 24, 1892. The verdict was \$7,502.95, being at the rate of \$65.00 per acre.

Tract 12a—The southwest quarter (S. W. $\frac{1}{4}$), north and west of center of river, of Section thirty-five (35), Township thirty-seven (37) North, Range ten (10) East of the Third Principal Meridian, containing one and seventy-three one-hundredths (1.73) acres, was obtained by condemnation proceedings from Chris. Korrell, June 24, 1892, the verdict, \$112.45, being at the rate of \$65.00 per acre.

Tracts 12b, 19 and 19a—Part of the south half (S. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$), east of the river, of Section thirty-four (34), Township thirty-seven (37) North, Range ten (10) East of the Third Principal Meridian, containing three and twenty-three one-hundredths (3.23) acres. The south half (S. $\frac{1}{2}$) of the northeast quarter (N. E. $\frac{1}{4}$), east of river, of Section three (3), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian; and the southeast quarter (S. E. $\frac{1}{4}$), east of river, of Section three (3), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, containing seventy-four and ninety-two one-hundredths (74.92) acres. These three tracts contain about fifty (50) acres of dry land and twenty-eight and fifteen one-hundredths (28.15) acres of river bed. They were purchased from S. J. Williams, on January 21, 1893, for \$2,500.00, the purchase being made for \$50.00 per acre for the dry land.

Tract 13—Part of the southwest quarter (S. W. $\frac{1}{4}$), west of railroad, of Section thirty-five (35), Township thirty-seven (37) North, Range ten (10) East of the Third Principal Meridian, containing twelve (12) acres. Purchased from Jas. Bruce, May 19, 1893, for \$6,000.00, or \$500.00 per acre.

Tract 14—Not acquired.

Tract 15—Part of the northwest quarter (N. W. $\frac{1}{4}$), west of the railroad, of Section two (2), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, containing one hundred and eight and sixty one-hundredths (108.60) acres. Purchased from Ellen Lonergan, August 26, 1892, for \$10,860.00, or \$100.00 per acre.

Part of Tract 16—Part of the north quarter (N. $\frac{1}{4}$) of the northwest quarter (N. W. $\frac{1}{4}$), west of the railroad, of Section two (2), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, containing eighty one-hundredths (0.80) of an acre. Purchased from John L. Norton, et al., April 10, 1893, for \$120.00, or at the rate of \$150.00 per acre. This was practically a lot fronting on the Romeo road.

Tract 17—Part of the north quarter (N. $\frac{1}{4}$) of the northwest quarter (N. W. $\frac{1}{4}$), west of the railroad, of Section two (2), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, containing one and seven one-hundredths (1.07) acres, was obtained by condemnation proceedings from Jacob Keig, June 28, 1893, for \$900.00. There was a building on the premises which Keig purchased from us for \$150.00; making the net cost of the land \$750.00, or \$700.00 per acre. This was quarry land.

Part of Tract 16 and Tracts 18 and 20—Part of the north quarter (N. $\frac{1}{4}$) of the northwest quarter (N. W. $\frac{1}{4}$), west of the railroad, of Section two (2), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian.

Part of the south three-quarters (S. $\frac{3}{4}$) of the northwest quarter (N. W. $\frac{1}{4}$), west of the railroad, of Section two (2), Township thirty-six (36) North, Range ten (10), East of the Third Principal Meridian.

The southwest quarter (S. W. $\frac{1}{4}$), west of the railroad, of Section two (2), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian.

These three (3) tracts, containing in all one hundred (100) acres, were purchased from Jacob Vogt, September 22, 1892, for \$10,500.00, or \$105.00 per acre.

This was comparatively high ground adjoining the Santa Fe Railway.

Tract 19—See Tract 12b.

Tract 21—The northeast quarter (N. E. $\frac{1}{4}$), east of river, of Section ten (10), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian.

Tract 22—The northwest quarter (N. W. $\frac{1}{4}$), west of the railroad, of Section eleven (11), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian.

Tract 24—The southeast quarter (S. E.

$\frac{1}{4}$), east of river, of Section ten (10), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian.

Tract 25—The southwest quarter (S. W. $\frac{1}{4}$), west of the railroad, of Section eleven (11), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian.

Tracts 28 and 31—The east half (E. $\frac{1}{2}$), east of the river, of Section fifteen (15), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian.

Tract 29—Part of the northwest quarter (N. W. $\frac{1}{4}$), west of the railroad, of Section fourteen (14), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian.

These seven (7) tracts were purchased from the heirs of Patrick Fitzpatrick, September 27, 1892, for \$57,043.60. Of this sum \$15,000.00 was paid for the "mound," a great gravel bank, and the remaining sum of \$42,043.60, was paid for the four hundred and twenty and four hundred and thirty-six one-thousands (420.436) acres of land, being \$100.00 per acre.

Tract 23—Not acquired.

Tracts 26, 27 and 30—Not acquired.

Tract 32—Part of the west half (W. $\frac{1}{2}$) of the southwest quarter (S. W. $\frac{1}{4}$) of Section fourteen (14), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, containing fifty (50) acres, was obtained by condemnation proceedings from James McWeeney, June 6, 1894, for \$5,200.00, or \$104.00 per acre.

Tracts 33 and 33a—Lots five (5) and six (6) in the northeast quarter (N. E. $\frac{1}{4}$) of the Subdivision of the west half (W. $\frac{1}{2}$) of Section twenty-two (22) and the east (E.) fraction of the northeast quarter (N. E. $\frac{1}{4}$), and the west part of the west (W.) fraction of the northeast quarter (N. E. $\frac{1}{4}$) of said Section twenty-two (22), all in Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian. These tracts are owned by Chester S. Allen. A verdict was rendered in the Circuit Court of Will County, December 22, 1894, of \$12,542.00 for Tract 33 (which included \$5,500.00 for ice plant and \$1,000.00 damages to lands not taken) and \$8,767.50 for Tract 33a. Order of judgment not yet entered.

Tract 34—Lot 4 in the Subdivision of the northeast quarter (N. E. $\frac{1}{4}$)

of Section twenty-two (22), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, containing fourteen (14) acres, was obtained by condemnation proceedings from James Harris, June 26th, 1894, for \$1,719.60, or \$122.50 per acre.

Tract 35—Lots 1, 2, and 3 in the Subdivision of the northeast quarter (N. E. $\frac{1}{4}$) of Section twenty-two (22), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, containing twenty-four (24) acres, was obtained by condemnation proceedings from Martha R. Geddes et al., June 26, 1894, the verdict of \$3,600.00 being at the rate of \$150.00 per acre.

Tracts 36 and 37—Not needed.

Tract 33—Lot five (5) in the Subdivision of the northwest quarter (N. W. $\frac{1}{4}$) of Section twenty-two (22), Township thirty-six (36) North, Range ten (10), East of the Third Principal Meridian, containing fourteen and seventy-nine one-hundredths (14.79) acres, is owned by Michael Loughran. A verdict was rendered in the Circuit Court of Will County, December 22, 1894, for \$5,176.50, or \$350.00 per acre for this tract. Order of judgment not yet entered.

Tract 39—The west five hundred and seven and seven-tenths (507.7) feet of the south half (S. $\frac{1}{2}$) of the northeast quarter (N. E. $\frac{1}{4}$) of Section twenty-two (22) Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, containing nine and sixty-three one-hundredths (9.63) acres, is owned by Michael Loughran. A verdict was rendered in the Circuit Court of Will County, December 22, 1894, of \$3,370.50, or \$350.00 per acre for this tract. Order of judgment not yet entered.

Tract 39a—Part of Lot seven (7) in Subdivision of the northeast quarter (N. E. $\frac{1}{4}$) of Section twenty-two (22), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian.

Tract 40—Part of the east half (E. $\frac{1}{2}$) of the northeast quarter (N. E. $\frac{1}{4}$), south and west of river, of Section twenty-two (22), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian.

Tract 41—Part south (S.) and west (W.) of river of the northwest quarter (N. W. $\frac{1}{4}$) of Section twenty-three (23), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian.

Tract 44a—Part of the north half (N. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of

Section twenty-two (22), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian.

Tract 56—The northwest quarter (N. W. $\frac{1}{4}$), between railroad and river, of Section twenty-seven (27), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian.

Tract 57—The northeast quarter (N. E. $\frac{1}{4}$), west of river, of Section twenty-seven (27), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian.

Tract 58—The northeast quarter (N. E. $\frac{1}{4}$), between the railroad and river, of Section twenty-seven (27), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian.

Tract 63—The southwest quarter (S. W. $\frac{1}{4}$), between railroad and river, of Section twenty-seven (27), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian. These eight (8) tracts were purchased from Belle F. Boehme and Clara P. Mayo, May 24, 1894, for \$29,125.00, or \$125.00 per acre for the two hundred and thirty-three (233) acres, included in these tracts.

Tract 42—Lot one (1) in the Subdivision of the southwest quarter (S. W. $\frac{1}{4}$) of Section twenty-two (22), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, containing thirty-seven and eighty-four one-hundredths (37.84) acres, is owned by Michael Loughran. A verdict was rendered in the Circuit Court of Will County, December 22, 1894, for \$7,568.00, or \$200.00 per acre, for this tract. Order of judgment not yet entered.

Tract 43—The west five hundred and seven and seven-tenths (507.7) feet of the north one-half (N. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of Section twenty-two (22), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, containing fifteen and forty-one one-hundredths (15.41) acres, is owned by Michael Loughran. A verdict was rendered in the Circuit Court of Will County December 22, 1894, of \$3,082.00, or \$200.00 per acre, for this tract. Order of judgment not yet entered.

Tracts 44, 45, 46 and 47—Not needed.

Tract 48—Part of Lot four (4), in the Subdivision of the southwest quarter (S. W. $\frac{1}{4}$) Section twenty-two (22), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meri-

dian, containing fifty-five and seventy one-hundredths (55.70) acres, is owned by Michael Loughran. A verdict was rendered in the Circuit Court of Will County, December 22nd, 1894, of \$11,140.00, or \$200.00 per acre, for this tract. Order of judgment not yet entered.

Tracts 49, 50, 51, 52, 53 and 54—Not needed.

Tract 55—Not yet determined upon.

Tracts 59 and 61—The north eight hundred and twenty-seven and twenty-six one-hundredths (827.26) feet of the southeast quarter (S. E. $\frac{1}{4}$), east of road, of Section twenty-eight (28), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, containing ten and two one-hundredths (10.02) acres. The north eight hundred and twenty-seven and twenty-six one-hundredths (827.26) feet of the southwest quarter (S. W. $\frac{1}{4}$), west of river, of Section twenty-seven (27), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, containing twenty-four and ninety-one one-hundredths (24.91) acres. These two (2) tracts, containing in all thirty-four and ninety-three one hundredths (34.93) acres, were purchased from Warren Hawley, June 30, 1894, for \$4,866.25, or \$125.00 per acre.

Tract 60—Not needed.

Tracts 60a and 62a—Part of the southeast quarter (S. E. $\frac{1}{4}$) of Section twenty-eight (28), Township thirty-six (36) North, Range ten (10), East of the Third Principal Meridian.

Part of the west fraction of the southwest quarter (S. W. $\frac{1}{4}$) of Section twenty-seven (27), Township thirty-six (36) North, Range ten (10), East of the Third Principal Meridian.

These two (2) tracts, containing thirty-three (33) acres, were purchased from Austin Godfrey, August 3, 1894, for \$4,125.00, or \$125.00 per acre.

Tract 63—See Tract 39a.

Tracts 64, 65, 66 and 67—Not needed.

The remaining tracts, down to Joliet, are not yet determined upon.

We have caused to be prepared maps showing, on a scale of one inch to two hundred (200) feet, the tracts of land mentioned in this report, together with the acreage and the amount paid per

acre for each tract. These maps are transmitted herewith for filing.

Respectfully submitted,

(Signed) B. A. ECKHART,
Chairman.

L. E. COOLEY,
WM. BOLDENWECK,
W. H. RUSSELL,
THOMAS KELLY,

Joint Committee on Finance and Engineering."

(Accompanied by three (3) maps.)

JOINT REPORT ON REORGANIZATION OF
ENGINEERING DEPARTMENT, WITH
REVISED RULES.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering, Finance and Rules, making recommendations with reference to the reorganization of the Engineering Department, as set forth in the report, in conformity with an order passed at the meeting held December 5, 1894 (page 2342 of the proceedings), and transmitting revised rules governing that Department; and the report and accompanying rules were read.

Mr. Cooley, seconded by Mr. Russell, moved that the report be adopted, ordered printed and placed on file, the recommendations made therein concurred in, and the accompanying revised rules ordered printed, and (under the Rules) laid over until the next meeting.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, the recommendations made therein concurred in, and the accompanying revised rules ordered printed and (under the Rules) laid over until the next meeting.

The following is

THE REPORT AND ACCOMPANYING REVISED
RULES:

"CHICAGO, Jan. 2, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN — Your Committee has considered the subject matter of the resolution passed by the Board at the

meeting held December 5, 1894 (page 2342 of the Proceedings), in regard to the force of the Engineering Department, and reports as follows:

After a full discussion, the question of reorganization was referred to the Committee on Rules, which, in conjunction with the Chief Engineer and Attorney, has revised the rules pertaining to the Engineering Department, and these have been adopted by the full Committee, with immaterial changes, and are submitted herewith as part of this report.

These rules provide for a limited force of one hundred employes, and are designed to more fully centralize the authority in the Chief Engineer, secure a greater strictness in the merit system, and make the tenure of position more reliable, all of which will conduce to a more compact organization and higher efficiency.

The regular force, as herein provided for is believed to be sufficient for the ordinary and regular duties of the Department for the ensuing year. Extra employes for special work may be had on requisition for such time as their services may be necessary, but these are not to be considered as part of the standing force, and are to be accounted for on a separate roll.

The force, as it has run for several months past, will be reduced nearly 25 per cent, and the salary account nearly 20 per cent. It should be feasible to accomplish the greater part of this reduction during the current month.

Your Committee desires to commend the efficiency of the Engineering Department. Experience has shown where improvements can be made, and, in reaching its conclusions, the Committee has had the cordial co-operation of the Chief Engineer and his immediate assistants. The work is now fully systematized, much of it being of a routine character, and many special lines of investigation and survey are nearing completion. All of this enables a material reduction in force and a more compact organization.

The Chief Engineer has carefully revised his list of employes, with a view to conforming the same to the proposed rules. The Committee has had the same under advisement, and finds that with the changes in internal organization which the Chief Engineer proposes, the reorganization can be effected in a satisfactory manner.

As the amendment to the rules must lie over for one week, before the same

can be adopted, we recommend that when the same are adopted, that they go into effect in the middle of January. Meantime, we suggest that the Chief Engineer make such changes in conformity thereto, as he may find feasible.

Very respectfully submitted,

(Signed)

L. E. COOLEY,

Chairman.

B. A. ECKHART,

FRANK WENTER,

WM. BOLDENWECK,

W. H. RUSSELL,

THOMAS KELLY,

Joint Committee on Engineering, Finance and Rules."

(Accompanied by revised rules).

The following are the

REVISED RULES:

"37. The Chief Engineer shall have charge of all engineering work and shall devote his time to the Sanitary District. Under his direction all surveying and civil engineering necessary or ordered by the Board shall be done, and he shall perform such other duties as may be imposed upon him from time to time by ordinances, orders or resolutions of the Board, and shall attend the meetings of the Board when required. His salary shall not exceed the sum of six thousand (\$6,000) dollars per annum, and his bond shall be in the sum of twenty thousand (\$20,000) dollars.

38. The Chief Engineer shall have entire charge of the work of the Engineering Department, and shall organize and administer the same so as to secure a full record of the nature and cost of all operations, and full responsibility of all employes.

39. The Engineering Department shall consist of three divisions, viz:

Division of Drafting and Designing.

The Assistant Chief Engineer shall have charge of this division. It shall execute all surveys, make and record all maps and plats, file all note-books and be custodian of same; prepare plans and specifications and perform such other duties as shall be assigned to it by the Chief Engineer.

Division of Construction.

Under the immediate direction of the Superintendent of Construction.

This division shall be charged with the supervision of the practical execution of the contracts in the field to the end that the same may be carried forward promptly, that the required rates of progress may be made and delinquencies or neglect on the part of the contractors may be noted and corrected.

Division of Records.

This division shall be in the direct charge of the Chief Engineer. In it shall be kept all administrative and financial records, and all reports from the several divisions. It shall also be charged with the duty of checking up estimates and returns made to the Chief Engineer by the Superintendent of Construction or any of the Assistant Engineers.

40. The Chief Engineer, by the advice and consent of the Board, shall select the following assistants, as needed by him subject to confirmation by the Board:

One Superintendent of Construction, at a salary not exceeding the rate of five thousand (\$5,000) dollars per annum, who shall give a bond in the sum of ten thousand (\$10,000) dollars:

One Assistant Superintendent of Construction, at a salary not exceeding the rate of thirty-six hundred (\$3,600) dollars per annum.

One Assistant Chief Engineer, at a salary not exceeding the rate of three thousand six hundred (\$3,600) dollars per annum.

One Principal Assistant Engineer who shall have the immediate supervision and direction of the Division of Drafting and Designing under the Assistant Chief Engineer, at a salary not exceeding the rate of twenty-seven hundred (\$2,700) dollars per annum.

Assistant Engineers not to exceed six in number, at a salary of eighteen hundred (\$1,800) dollars to twenty-one hundred (\$2,100) dollars per annum. The amount for each Assistant Engineer to be fixed by order of the Board.

41. Of the Assistant Engineers one shall be assigned by the Chief Engineer to serve as resident engineer in charge at each of the respective engineering stations on the line of the work, and the remainder of said Assistant Engineers shall perform such duties as may be assigned to them by the Chief Engineer.

42. The Chief Engineer shall appoint, as authorized by the Board, such employes as the needs of the service may

require but shall not exceed the numbers as designated herewith:

	<i>Rate per month.</i>
7 Sub-Assistant Engineers	\$125 to \$150 00
12 Instrument men.....	100 to 125 00
10 Sub-Instrument men.....	75 to 100 00
10 Computers.....	75 to 100 00
10 Draftsmen.....	75 to 150 00
10 Rodmen, not to exceed.....	75 00
26 Flagmen, Chainmen and Axmen, not to exceed.....	62 40
1 Clerk to the Superintendent of Construction.....	75 00
Laborers, not to exceed.....	54 00
1 Messenger.....	40 00

Sub-Assistant Engineers, Instrument men, Sub-Instrument men and Draftsmen shall be men of technical competence and training for the duties assigned them.

All appointments, changes of grade and fixing of pay is to be done with the concurrence of the President and Committee on Engineering.

43. The Chief Engineer may employ a Record Clerk at a salary not exceeding fifteen hundred (\$1,500) dollars per annum, and a typewriter at the rate of not over seventy-five (\$75) dollars per month.

44. The Assistant Chief Engineer shall be Acting Chief Engineer in the absence of the Chief Engineer and by his authority, or when authorized by the Board.

45. The Superintendent of Construction shall have charge of the Division of Construction and shall perform such other duties as may be assigned to him by the Chief Engineer. He shall see that all contracts entered into by the District with various parties are efficiently carried out and he shall make a report to the Chief Engineer at least once in each month, giving in detail the condition of the work in process of construction by the District, the progress made therein, and the manner in which the same is being executed. A copy of the report shall be transmitted to the Board by the Chief Engineer, with such recommendations as the Chief Engineer considers proper to make relative thereto.

46. The Assistant Superintendent of Construction shall assist the Superintendent of Construction in the administrative charge of all work of construction and perform such other duties as may be assigned him. He shall be Acting Superintendent of Construction in the absence of the Superintendent, or when authorized by the Chief Engineer or the Board.

47. For any special service of limited

duration and for which the regular force is not available, employees are to be had by requisition on the Board and any such requisitions shall state the number, grade, rate of compensation and duration of service required. All such employment shall be designated "Special" and returned on separate vouchers or pay-rolls.

48. All changes of plans, whatsoever, by which any work is to be carried out in any manner different from that provided for in any contracts, shall be determined upon and authorized by the Board, and proper specifications and plats therefore shall be filed for record with the Clerk, and the President shall issue notice attested by the Clerk, to the parties in interest.

49. Before authorizing or allowing any extra work or fixing any price therefor or directing or passing upon any work not specifically described and provided for in any contracts, the Chief Engineer shall submit all matters in relation thereto to the Board or its duly authorized committees, sitting in an administrative capacity.

50. All current estimates of the work done under any contract and the certificates therefor shall be made by the respective resident engineers, and the same shall be certified by the Superintendent of Construction or the Assistant Superintendent of Construction, and approved by the Chief Engineer.

51. Whenever the Chief Engineer shall give to the resident engineers any order or instruction pertaining to the work of construction, a copy of the same shall at the same time be delivered to the Superintendent of Construction.

52. The employees confirmed by the Board shall at all times be subject to call before the Board and its authorized committees and it is made part of their duty to fully advise the Board through the President or said committees, of any matters of administration or engineering, which may be for the good of the District, when requested so to do.

53. The Chief Engineer shall, at stated intervals when the needs of the service require it, examine or cause to be examined by Assistant Engineers selected by him for that purpose any applicants for positions in the Engineering Department where previous technical training is necessary.

No applicant shall receive an appointment unless the Chief Engineer shall be satisfied from such examination that he

is fully qualified for the position sought and other things being equal those who are citizens and residents of Cook County shall be given the preference in making such appointments. The tenure of position of new appointees shall be provisional until their fitness is practically demonstrated.

Promotion in the regular force shall also be made from those who have passed an examination directed by the Chief Engineer for determining the qualifications of candidates for the place or places to be filled; but the Chief Engineer in making such promotions shall consider the efficiency of the candidate, as shown by his previous work in the department, in connection with the result of such examination.

Whenever, in the opinion of the Chief Engineer, a reduction of the force may be made consistently with the best interests of the District, he shall so report to the Board.

The Chief Engineer shall have the

right of summary discharge for insubordination, or conduct unbecoming an employe of the Sanitary District.

The merit system shall control all appointments and promotions in said Engineering Department."

CONFERENCE WITH CONTRACTORS ON UNIFORM HOSPITAL SERVICE.

The President made a verbal report, stating that on behalf of the Joint Committee on Health and Public Order, Labor and Judiciary, he had arranged for a conference with all the contractors for Thursday, January 3, 1895, with reference to the creating of a uniform hospital service on the Main Channel.

ADJOURNMENT.

On motion of Mr. Boldenweck, seconded by Mr. Kelly, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS

—OF THE—

BOARD OF TRUSTEES

—OF THE—

SANITARY DISTRICT OF CHICAGO.

JANUARY 9 AND 11, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and fifty-fifth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, January 9, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—six (6) members, were present.

MINUTES.

Mr. Boldenweck, seconded by Mr. Kelly, moved that action on the minutes of the regular meeting held January 2,

1895, be postponed until the next regular meeting.

The motion prevailed unanimously, and it was so ordered.

VOUCHERS.

The Clerk presented the following vouchers:

PAY ROLLS.

Law Dept., Joliet roll, (Dec., 1894).....	\$458 33
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ENGINEERING DEPARTMENT.

Construction Account—

Griffiths & McDermott (Sec. 1, Jan. 1, 1895)...	\$16,710 59
McArthur Bros. (Sec. 2, Jan. 1, 1895).....	17,343 92
Gilman & Co. (Sec. 3, Jan. 1, 1895).....	20,732 08
McArthur Bros. (Sec. 4, Jan. 1, 1895).....	13,287 95
The Qualey Construc-	

tion Co. (Sec. 5, Jan. 1, 1895).....	\$ 3,431 81
Mason, Hoge & Co. (Sec. 6, Jan. 1, 1895).....	14,499 19
Mason, Hoge & Co. (Sec. 7, Jan. 1, 1895).....	22,071 00
Mason, Hoge, King & Co. (Sec. 8, Jan. 1, 1895).....	20,679 75
Halvorson, Richards & Co. (Sec. 9, Jan. 1, 1895).....	24,066 52
E. D. Smith & Co. (Sec. 10, Jan. 1, 1895).....	12,849 37
Mason, Hoge & Co. (Sec. 11, Jan. 1, 1895).....	9,361 41
Mason, Hoge & Co. (Sec. 12, Jan. 1, 1895).....	15,324 97
Mason, Hoge & Co. (Sec. 13, Jan. 1, 1895).....	9,810 94
Smith & Eastman (Sec. 14, Jan. 1, 1895).....	28,046 38
Wright, Meysenburg, Sinclair & Carry (Sec. 15, Jan. 1, 1895).....	2,323 13
Heldmaier & Neu (Sec. A, Jan. 1, 1895).....	5,402 25
Heldmaier & Neu (Sec. B, Jan. 1, 1895).....	4,680 58
Western Dredging & Improvement Co. (Sec. C, Jan. 1, 1895).....	9,360 87
E. D. Smith & Co. (Sec. D, Jan. 1, 1895).....	6,447 57
Angus & Gindele (Sec. E, Jan. 1, 1895).....	4,818 80
Gahan & Byrne (Sec. G, Jan. 1, 1895).....	7,794 67
Gahan & Byrne (Sec. H, Jan. 1, 1895).....	101 50
Christie & Lowe, (Sec. I, Jan. 1, 1895).....	5,925 94
Christie & Lowe, (Sec. K, Jan. 1, 1895).....	7,476 87
The Heidenreich Co. (Sec. L, Jan. 1, 1895).....	6,276 17
The Heidenreich Co. (Sec. M, Jan. 1, 1895).....	1,807 61
Hayes Bros., et al., (Sec. N, Jan. 1, 1895).....	181 12
McMahon & Montgomery Co., et al., (Sec. O, Jan. 1, 1895).....	3,179 38
Mason, Hoge & Co. (Sec. 6, extra—special work—retaining embankment and repairing and raising levee, Jan. 1, 1895).....	1,537 00
Mason, Hoge & Co., (Sec. 7, extra work—dimension stone, riprap work, earth core and embankment, Jan. 1, 1895).....	1,105 00
	<hr/> \$297,134 34

ENGINEERING DEPARTMENT.

Cameron, Amberg & Co. (stationery).....	\$25 50
Keuffel & Esser Co. (drafting material).....	30 00
Eugene Dietzgen Co. (drafting material).....	2 40

Rand, McNally & Co. (mounting maps)....	\$ 2 00
W.A. Olmsted, (mounting maps).....	3 20
Soper Lumber Co. (stakes).....	70 18
The Tobey Furniture Co. (furniture).....	8 00
Geneva Optical Co., (photo sundries).....	4 77
Henry Gebhardt, (rack for drawings).....	3 00
Chicago Towel Supply Co. (toweling).....	5 40
C. S. Austin (ice).....	9 00
T. Ryan (coal).....	39 00
John Larney (coal)...	12 00
John McCaffery (rent, Brighton Park, Dec., 1894).....	25 00
John T. Allison (rent, Summit, Dec., 1894)...	20 00
J. M. Abbitt (rent, Willow Springs, Dec., 1894).....	20 00
H. S. Norton, (rent, Lemont, Dec., 1894)...	18 00
O. W. Moon (rent, Lockport, Dec. 1894)	20 00
J. M. Abbitt (oil and paint).....	3 00
	<hr/> \$320 45

CLERICAL DEPARTMENT.

Warner's Towel Supply (toweling).....	\$ 2 00
C. S. Austin (ice).....	3 00
Henry Gebhardt, (stationery locker).....	23 00
	<hr/> \$28 00

LAW DEPARTMENT.

Warner's Towel Supply (toweling).....	\$ 1 50
C. S. Austin (ice).....	3 00
Callaghan & Co. (law books, Illinois Reports).....	449 50
	<hr/> \$454 00

GENERAL ACCOUNT.

John F. Higgins (printing proceedings, etc., Dec., 1894).....	\$144 49
Chicago Telephone Co. (telephone service, Jan. to March, 1895).....	764 17
The Engineering News Publishing Co. (advertising re-letting of Section E).....	23 20
The Chicago Carpet Co. (furniture, etc.).....	75 25
	<hr/> \$1,007 11
Grand total.....	<hr/> \$299,402 23

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—

Messrs. Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—six (6).
Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending January 5, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, Jan. 9, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending January 5, 1895, as the same have been reported to me:

Engineering Department.....	138
Clerical Department.....	4
Law Department.....	7
Treasury Department.....	1

Police Department.....	48
Telephone operator.....	1

Total employes..... 199

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk.”

REPORT ON SUNDRY DEPOSITS MADE BY CLERK WITH TREASURER.

The Clerk presented a report, accompanied by fifteen (15) enclosures, being special receipts for moneys received from various sources and deposited with the Treasurer of the District, as set forth in the report.

The report was read and, by unanimous consent, was ordered printed and, with enclosures, placed on file.

The following is

THE REPORT:

“CHICAGO, Jan. 9, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I transmit herewith for filing fifteen (15) special receipts from the Treasurer of the District for moneys received by me from various sources, and deposited to the credit of the District, as follows:

DATE.	Received From	For	Account.	Amount.
Dec. 18, 1893.	McArthur Bros. Co.....	Ice plant.....	Law—Land....	\$ 500 00
Jan. 6, 1894.	McArthur Bros. Co.....	Power house...	Law—Land....	325 00
Mar. 10, 1894.	Ricker, Lee & Co.....	Railroad iron..	Law—Land....	345 54
Mar. 14, 1894.	Streeter & Kenefick.....	Ice plant, etc..	Law—Land....	1,337 20
Mar. 16, 1894.	A., T. & S. Fe R. R.....	Material.....	Eng.—Const..	41 60
Mar. 21, 1894.	Western Dredging and Improvement Co.....	Rent.....	General.....	150 00
Apr. 2, 1894.	Heldmaier & Neu.....	Rent.....	General.....	120 00
May 24, 1894.	The Attorney.....	Land not taken	Law—Land....	641 54
June 7, 1894.	McArthur Brothers.....	Rent.....	General.....	150 00
Sept. 15, 1894.	Western Dredging and Improvement Co.....	Rent.....	General.....	150 00
Sept. 15, 1894.	Heldmaier & Neu.....	Rent.....	General.....	120 00
Oct. 5, 1894.	U. W. Weston.....	Witness fees..	Law.....	275 00
Nov. 12, 1894.	McArthur Brothers.....	Rent.....	General.....	150 00
Dec. 17, 1894.	Christie & Lowe and Gahan & Byrne.....	Repair of tow path.....	Engineering...	364 00
Dec. 31, 1894.	A. C. McClurg & Co.....	Histories sold..	General.....	36 00
Total.....				\$4,705 88

Respectfully submitted,

(Signed) THOS. F. JUDGE,

(Fifteen (15) enclosures.)

Clerk.”

MONTHLY REPORT FROM LAW DEPARTMENT.

The Clerk presented a report from the Law Department for the month of December, 1894.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, Jan. 9th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I submit herewith the monthly report for December, 1894. The total amount paid out by this Department during the month is as follows:

Salaries.

Attorneys.....	\$2,005 55	
Office force.....	625 48	
		\$2,631 03

General Expenses.

Expense account.....	\$ 34 50	
Legal services.....	350 00	
Court costs.....	205 50	
Right of way.....	772 20	
		\$1,362 20
Total.....		\$3,993 23

After a trial lasting three (3) weeks, a verdict was reached in the suits of The Sanitary District vs. Allen and Loughran, including seven different tracts, amounting to about one hundred and ninety acres of land, sixty of which belonged to Allen and the remainder to Loughran. The prices per acre awarded by the jury ranged from \$200 to \$350, the latter price being for tracts on which it was claimed there was good stone or on which an ice plant was located.

An order of judgment has been entered for the Allen tracts and a motion for a new trial made as to the Loughran tracts.

Much time has been given during the month to the preparation under the direction of the Joint Committee on Finance and Engineering of the land descriptions and material required for its comprehensive report, in the nature of a final report on the acquisition of right of way.

Attention has been given to the preparation of the proposal for bids for the new issue of bonds.

Agreements for the construction of retaining walls on Sections 8, 11, 12 and 13 were prepared and executed.

An oversight has been given to the proposal for bids for the completion of the work on Section F, and to the form of agreement necessary in connection therewith.

The completion of the Annual Report, attention to matters connected with the reletting of Section F, and the routine work, will occupy the Department during the coming month.

Respectfully submitted,

(Signed) GEO. E. DAWSON,
Attorney."

ANNUAL PROPERTY RETURN FROM LAW DEPARTMENT.

The Clerk presented the annual property report from the Law Department for the year 1894.

By unanimous consent the same was ordered placed on file.

THIRD ADDITIONAL EXTENSION OF TIME ON COMPLETION OF LEVEES ON SECTIONS 1 AND A.

The Clerk presented a report from the Chief Engineer, asking a third extension of time, additional to that granted at the meeting of the Board held November 28, 1894, (page 2323 of the Proceedings), to February 15, 1895, as set forth in the report, for the completion of the River Diversion levees on Sections 1 and A, under contracts with Griffiths & McDermott and Heldmaier & Neu; and the report was read.

Mr. Kelly, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed and placed on file, and the extension of time to February 15, 1895, asked for therein, granted.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, and the extension of time to February 15, 1895, asked for therein, granted.

The following is

THE REPORT:

"CHICAGO, Jan. 9, 1895.

To the Honorable the Board of Trustees, of the Sanitary District of Chicago;

GENTLEMEN—Owing to the condition of the levee on Section A, which is still unfinished, I am obliged to ask for an

other extension of time in which this levee may be completed by the contractors now engaged upon it, Griffiths & McDermott and Heldmaier & Neu. I believe this work will be completed within the present month, but to cover contingencies, I ask for an extension to February 15th.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

MONTHLY REPORT FROM TREASURY DEPARTMENT.

The Clerk presented a report from the Treasury Department for the month of December, 1894.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT :

"Balance on hand at date of last report.....	\$2,083,225.87
Received from Thos. F. Judge, Clerk, Engineering Dept.—Tow-path Repairs.....	\$ 364.00
Received from Thos. F. Judge, Clerk, General Account—Sale of Histories to A.C. McClurg & Co.....	36.00
Received from Ft. Dearborn National Bank, interest for December	590.95
Received from National Bank of Illinois, interest for December.....	600.59
Received from Metropolitan National Bank, interest for December.	548.92
Received from American Trust and Savings Bank, interest for December.....	35.66
Received from Chicago National Bank, interest for December.....	521.57
Received from Globe National Bank, interest for December....	866.63
	<u>\$3,564.32</u>
Total cash received for month.....	\$2,086,790.19
Total cash disbursed during month as per annexed schedules, viz:	
Clerical Department....	\$ 899.92
Treasury Department..	166.67
Engineering Department.	28,534.40
Engineering—Construction Department.....	434,251.54
Law Department.....	4,019.50
Law Department—Land Account.....	1,776.57
General Account.....	3,916.36
Police Department.....	7,205.04

Bond Interest and Premium Account.....	287,500.00
	<u>\$768,270.00</u>

Balance this date, in banks as per schedule endorsed hereon	<u>\$1,318,520.19</u>
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(Signed) MELVILLE E. STONE,
Treasurer.

CHICAGO, Jan. 2, 1895."

SCHEDULE :

Fort Dearborn National Bank.....	\$251,122.08
National Bank of Illinois.....	251,962.61
Chicago National Bank.....	250,638.08
Metropolitan National Bank.....	230,859.95
American Trust and Savings Bank.	21,003.79
Globe National Bank.....	339,933.68

Total..... \$1,318,520.19

PAYMENT FOR WORK ON GUARD BANK, UPPER BASIN, ILLINOIS AND MICHIGAN CANAL.

Mr. Eckhart, Chairman, presented a report from the Joint Committee on Finance and Engineering, with reference to and accompanied by the voucher of the Canal Commissioners of the Illinois and Michigan Canal, in full of contract for completed work of raising and strengthening the easterly guard bank of the Illinois and Michigan Canal at Basin No. 1, Joliet, together with communication and report, presented and referred to that Committee, at the meeting held October 31, 1894 (page 2280 of the proceedings), recommending that said voucher be paid, less a reduction of \$1,000, as set forth in the report; and the report was read.

Mr. Eckhart, seconded by Mr. Russell, moved that the report be adopted, ordered printed, and, with enclosures, placed on file, the recommendations made in the report concurred in, and the accompanying voucher, as amended, approved and ordered paid, as provided in the report.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and with enclosures, placed on file, the recommendations made in the report concurred in, and the accompanying voucher, as amended, approved and ordered paid, as provided in the report.

The following is

THE REPORT:

"CHICAGO, Jan. 9th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Committee have had

under consideration the voucher drawn in favor of the Canal Commissioners of the Illinois and Michigan Canal for work done below Lockport, Ill., for strengthening and protecting the Canal bank from Lock No. 4, to Hyde's Mill, at Upper Dam, heretofore referred to it by your Honorable Body.

The work has been approved by the Chief Engineer as conforming to the requirements of the contract entered into by the parties, but inasmuch as a portion of the material entering into said bank was taken out adjacent to same, at a cost admittedly much less than if it had been carried from the distance at first contemplated by both parties to the contract, your Committee recommend that said voucher be paid with a reduction of one thousand dollars (\$1,000) from the amount therein stated, making the amount to be paid thereon the sum of \$17,052.85. The Canal Commissioners have signified their willingness to accept said sum for said work.

We transmit herewith for filing, the voucher, with letter of October 20th, 1894, from said Canal Commissioners, announcing the completion of said work.

(Signed)

B. A. ECKHART,
Chairman.

L. E. COOLEY,
W. H. RUSSELL,
WM. BOLDENWECK,
THOMAS KELLY,

Joint Committee on Finance and Engineering."

(Transmitting voucher.)

ADDITIONAL MAP OF RIGHT-OF-WAY LANDS ACQUIRED TO DATE.

Mr. Eckhart, Chairman, presented a report from the Joint Committee on Finance and Engineering, transmitting additional map belonging to the final report on all right-of-way lands acquired to date, presented at the meeting held January 2, 1895, (page 2383 of the Proceedings), and recommending that said map be placed on file.

Mr. Eckhart, seconded by Mr. Kelly, moved that the report be ordered printed, and, with accompanying map, placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT:

"CHICAGO, Jan. 9th, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—In the transmission to you of our final report on the acquisition of lands, together with maps, the maps showing the lots in the subdivision known as Manchester was inadvertently omitted.

We transmit same herewith to be filed with said report.

(Signed)

B. A. ECKHART,
Chairman.

L. E. COOLEY,
WM. BOLDENWECK,
W. H. RUSSELL,
THOMAS KELLY,

Joint Committee on Finance and Engineering."

(Accompanied by map).

POSTPONEMENT OF ACTION ON REVISED RULES FOR ENGINEERING DEPARTMENT.

By unanimous consent, action on the revised rules governing the Engineering Department, presented, ordered printed and laid over at the meeting held January 2, 1895, (page 2409 of the Proceedings) was deferred until the next meeting.

PRESENTATION OF BIDS FOR RE LETTING OF SECTION F OF MAIN CHANNEL.

The President then announced that in conformity with the advertisement on December 19, 1894, inviting proposals for the work of completing Section F of the Main Channel under the contract with Ricker, Lee & Co., the Board would now proceed to open the bids received in response to said advertisement.

The Clerk then presented and opened bids as shown by the following

SCHEDULE OF BIDS:

No.	NAME OF BIDDER.	Place.	Checks Deposited.
1	Halvorson, Richards & Co.....	Lemont, Ill.....	\$5,000 00
2	E. D. Smith & Co.....	Romeoville, Ill....	5,000 00
3	John A. McAnrow.....	Chicago.....	5,000 00
4	F. C. Weir.....	Cincinnati, Ohio..	5,000 00
5	John McKechney & Co.....	Chicago.....	5,000 00
6	Christie & Lowe.....	Chicago.....	5,000 00
7	Griffiths and McDermott Construction Company..	Chicago.....	5,000 00
8	J. W. Byrnes.....	Galveston, Tex....	5,000 00
9	Campbell, Dennis & Co.....	Joliet, Ill.....	5,000 00

THE FOLLOWING ARE THE BIDS IN DETAIL:

RE-LETTING SECTION F.

BID NO. 1—HALVORSON, RICHARDS & CO.

CLASSIFICATION.	Quantities— Cu. Yds.	Price.	Amount.
Glacial Drift.....	572 564	\$0.43	\$246,202 52
Solid Rock.....	16 310	.80	13 048 00
Total.....			\$259,250 52

BID NO. 2—E. D. SMITH & CO.

CLASSIFICATION.	Quantities— Cu. Yds.	Price.	Amount.
Glacial Drift.....	572,564	\$0.40	\$229,025 60
Solid Rock.....	16,310	1.25	20,387 50
Total.....			\$249,413 10

BID NO. 3—JOHN A. McANROW

CLASSIFICATION.	Quantities— Cu. Yds.	Price.	Amount.
Glacial Drift.....	572,564	\$0.33 $\frac{1}{4}$	\$193,240 35
Solid Rock.....	16,310	1.00	16 310 00
Total.....			\$209,550 35

BID NO. 4 F. C. WEIR.

CLASSIFICATION.	Quantities— Cu. Yds.	Price.	Amount.
Glacial Drift.....	572,564	\$0.29½	\$168,906 38
Solid Rock.....	16,310	.90	14,679 00
Total.....			\$183,585 38

BID NO. 5—JOHN M'KECHNEY & CO.

CLASSIFICATION.	Quantities— Cu. Yds.	Price	Amount.
Glacial Drift.....	572 564	\$0.33½	\$191 808 94
Solid Rock.....	16 310	.90	14,679 00
Total.....			\$206 4 7 94

BID NO. 6—CHRISTIE & LOWE.

CLASSIFICATION.	Quantities— Cu. Yds.	Price.	Amount.
Glacial Drift.....	572 564	\$0.35	\$200,397 40
Solid Rock.....	16 310	1.00	16 310 00
Total.....			\$216.707 40

BID NO. 7—GRIFFITHS & M'DERMOTT CONST CO.

CLASSIFICATION.	Quantities— Cu. Yds.	Price.	Amount.
Glacial Drift.....	572,564	\$0.38½	\$221,152 84½
Solid Rock.....	16,310	.98	15,983 80
Total.....			\$237 186 64½

BID NO. 8—J. W. BYRNES

CLASSIFICATION.	Quantities— Cu. Yds.	Price.	Amount.
Glacial Drift.....	572 564	\$0.37	\$211 848 68
Solid Rock.....	16,310	.79	12 884 90
Total.....			\$224 733 58

BID NO. 9—CAMPBELL, DENNIS & CO.

CLASSIFICATION.	Quantities— Cu. Yds.	Price.	Amount.
Glacial Drift.....	572,564	\$0.34½	\$197,534 58
Solid Rock.....	16,310	.74½	12,150 95
Total.....			\$209,685 53

KEY TO SCHEDULE OF BIDS ON SECTION F, RECEIVED JAN. 9TH, 1895.

Names of Bidders in the Order in which their Bids were received.

Bid No.	NAME OF BIDDER.	PRICE BID.	
		Glacial Drift.	Solid Rock.
1....	Halverson, Richards and Co.....	.43	.80
2....	E. D. Smith & Co.....	.40	1.25
3....	John A. McAnrow.....	.33¾	1.00
4....	F. C. Weir.....	.29½	.90
5....	John McKechney & Co.....	.33½	.90
6....	Christie & Lowe.....	.35	1.00
7....	Griffiths & McDermott Construction Company.....	.38⅝	.98
8....	J. W. Byrnes.....	.37	.79
9....	Campbell, Dennis & Co.....	.34½	.74½

TABLE OF BIDS IN ORDER OF MAGNITUDE—LOWEST BID FIRST.

Bid No.	Order.	NAME OF BIDDER.	Amount.
4	1	F. C. Weir.....	\$188,585 38
5	2	John McKechney & Co.....	206,487 94
3	3	John A. McAnrow.....	209,550 35
9	4	Campbell, Dennis & Co.....	209,685 53
6	5	Christie & Lowe.....	216,707 40
8	6	J. W. Byrnes.....	224,733 58
7	7	Griffiths & McDermott Construction Co.....	237,136 64½
2	8	E. D. Smith & Co.....	249,413 10
1	9	Halverson, Richards & Co.....	259,250 52

BIDS TO BE TABULATED AND REFERRED
TO JOINT COMMITTEE ON ENGI-
NEERING AND FINANCE.

Mr. Boldenweck, seconded by Mr. Russell, moved that the bids just received be compiled, summarized and tabulated by the Chief Engineer, incorporated in Proceedings, and the subject matter of the bids be referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and it was so ordered.

PRESENTATION OF ALTERNATIVE BIDS
FOR \$4,000,000 BONDS—FOURTH ISSUE.

The President then announced that, in

conformity with the advertisement of December 26, 1894, inviting bids for the purchase of \$4,000,000 of bonds of the District, being the fourth issue, and being for alternative tenders for 4½ and 5 per cent currency and 4½ and 5 per cent gold bonds, the Board would now proceed to the opening and consideration of the bids received for the said bonds up to 12 o'clock noon of January 9, 1895.

The Clerk then presented and opened eight (8) bids received for the purchase of said issue of bonds, as shown in the following

January 9,]

- 2423 -

[1895.

Number.	NAME OF BIDDER.	LOCATION.	AMOUNT BID FOR.	BIDS.				CHECKS DEPOSITED.
				4½% Currency	4½% Gold.	5% Currency.	5% Gold.	
1	The State Savings Bank.....	St. Paul, Minn.....	\$ 25,000 {	\$93.75 premium or 100 ^{37.5} / ₁₀₀	\$93.75 premium or 100 ^{37.5} / ₁₀₀	\$1,031.25 premium or 104 ^{1.25} / ₁₀₀	\$1,031.25 premium or 104 ^{1.25} / ₁₀₀	\$ 780.93 }
2	Illinois Trust and Savings Bank.	Chicago.....	4,000,000	.....	.....	.....	\$55,000 premium or 101 ^{37.5} / ₁₀₀	120,000.00 }
3	Mason, Lewis & Co.....	Chicago.....	500,000	.....	.....	.....	\$7,650 premium or 101 ⁵³ / ₁₀₀	15,000.00 }
4	J. & W. Seligman & Co.....	New York.....	4,000,000 {	\$15,600 premium or 100 ³⁹ / ₁₀₀	\$53,200 premium or 101 ³³ / ₁₀₀	\$146,800 premium or 103 ⁶⁷ / ₁₀₀	\$175,200 premium or 101 ³⁸ / ₁₀₀	125,256.00 }
5	New York Life Insurance Co...	New York.....	4,000,000 {	\$20,100 premium or 100 ⁵⁰ / ₁₀₀	\$52,400 premium or 101 ³¹ / ₁₀₀	\$146,000 premium or 103 ⁶⁵ / ₁₀₀	\$183,200 premium or 104 ³⁸ / ₁₀₀	125,500.00 }
6	N. W. Harris & Co. (for syndicate)	Chicago & New York	4,000,000 {	\$12,640 premium or 100 ^{31.6} / ₁₀₀	\$53,333.33 premium or 101 ^{33.33} / ₁₀₀	\$111,001 premium or 102 ^{77.5} / ₁₀₀	\$153,333 premium or 103 ^{83.3} / ₁₀₀	120,000.00 }
7	E. H. Gay & Co. (for syndicate)	Chicago and Boston.	4,000,000	.....	.....	.....	\$86,560 premium or 102 ^{1.64} / ₁₀₀	120,000.00 }
8	Farson, Leach & Co.....	Chicago.....	500,000 Bal. on conditions and future notice to Board.	.....	.....	.....	\$33,330 premium or 104 ^{6.66} / ₁₀₀	120,000.00 }

The following are

THE BIDS IN DETAIL:

(1.) "THE STATE SAVINGS BANK, }
ST. PAUL, Minn., Jan. 8th, 1895. }

*Board of Trustees of the Sanitary District
of Chicago, Chicago, Ill.:*

GENTLEMEN—In accordance with your circular of December 26th, 1894, requesting sealed proposals for the purchasing of four million (\$4,000,000) dollars worth of bonds of the Sanitary District of Chicago, in denominations of one thousand (\$1,000) dollars each, with interest payable semi-annually on the first day of January and July of each year, and the principal payable at the rate of two hundred thousand (\$200,000) dollars each year for twenty years next succeeding January 1st 1895, the first payment to be made January 1st, 1896. Both interest and principal payable at the office of the Treasurer of said Sanitary District of Chicago, Ill., in lots of twenty-five thousand (\$25,000) dollars and multiples of twenty-five thousand (\$25,000) dollars, each purchaser being required to take a pro rata share of short time and long time bonds.

We bid as follows:

If bonds are issued at $4\frac{1}{2}$ per cent, principal and interest payable in gold coin of the present standard of weight and fineness, we will take twenty-five thousand (\$25,000) dollars at par, accrued interest, and \$3.75 each premium.

If bonds are issued at $4\frac{1}{2}$ per cent, principal and interest payable in lawful currency of the United States, we will take twenty-five thousand (\$25,000) dollars at par, accrued interest, and \$3.75 each premium.

If bonds are issued at 5 per cent, principal and interest payable in gold coin of the present standard of weight and fineness, we will take twenty-five thousand (\$25,000) dollars at par, accrued interest, and \$41.25 each, premium.

If bonds are issued at 5 per cent, principal and interest payable in lawful currency of the United States, we will take twenty-five thousand (\$25,000) dollars at par, accrued interest, and \$41.25 each, premium.

We enclose draft on Chicago for seven hundred and eighty and ninety-three one-hundredths (\$780.93) dollars payable to the order of T. F. Judge, Clerk of the Sanitary District of Chicago, same being for 3 per cent of the amount of our bid. Amount of

said draft to be applied toward the payment of bonds that may be awarded to us, or returned to us if our bid is not accepted.

Yours truly,

(Signed)

J. M. GOLDSMITH,
Treasurer.

(2.)

"ILLINOIS TRUST AND SAVINGS BANK, }
Bond Department.
CHICAGO, January, 9th, 1895. }

*Hon. Board of Trustees of the Sanitary
District of Chicago.*

GENTLEMEN—For all of the four million dollars (\$4,000,000) legally issued five (5) per cent bonds of the Sanitary District of Chicago, bearing date February 1, 1895, and payable in the amount of two hundred thousand dollars (\$200,000) on the first day of January, 1896, and two hundred thousand dollars (\$200,000) on the first day of January in each year thereafter to 1915 inclusive, said bonds being of the par value of one thousand dollars (\$1,000) each, payable both principal and interest at the office of the Treasurer of the Sanitary District at Chicago, Illinois, in gold coin of the present standard of weight and fineness, being the bonds described in your advertisement of December 26, 1894, we will pay par and accrued interest and a premium of fifty-five thousand dollars (\$55,000.)

Said bonds being delivered as follows: One million dollars (\$1,000,000) as soon after award as the validity of the issue can be passed upon by our attorneys; one million dollars (\$1,000,000) on or before one month after said first delivery; one million dollars (\$1,000,000) on or before two months after said first delivery; one million dollars (\$1,000,000) on or before three months after said first delivery at our option. The usual papers evidencing the legality to be furnished us prior to payment.

In accordance with your requirements, we enclose herewith our check, No. 65,323, to the order of the Clerk of the Sanitary District of Chicago, for one hundred and twenty thousand dollars (\$120,000) as a guarantee of the good faith of our bid.

It is to be expressly understood that our bid is for all of the above described bonds, and not for any part thereof.

Respectfully submitted,

(Signed)

B. M. CHATTEL

Asst. Cashier."

(3.) "CHICAGO, Jan. 9th, 1895.
Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—For \$500,000.00 Sanitary District of Chicago 5 per cent. gold bonds, dated February 1st, 1895—\$25,009.00 maturing January 1st, 1896, and a like amount annually thereafter: We will pay par, accrued interest and a total premium of \$7,650.00, which is equivalent to 101.53; we to be furnished prior to delivery a full certified transcript of proceedings, showing legality of issuance satisfactory to our attorney.

In compliance with your advertisement we enclose our certified check for \$15,000 00.

Respectfully submitted,

(Signed) MASON, LEWIS & Co.

(4.) "NEW YORK, Jan. 7th, 1895.
Board of Trustees of the Sanitary District of Chicago:

DEAR SIRs—In accordance with your advertisement, inviting proposals for the purchase of bonds, said proposals to be received up to 12 o'clock noon, January 9th, 1895, we beg to submit the following alternative propositions:

We hereby offer to purchase the four million (\$4,000,000) dollars worth of bonds of the Sanitary District of Chicago, in denominations of one thousand (\$1,000) dollars each, with interest payable semi-annually on the first days of January and July of each year, and the principal payable at the rate of two hundred thousand (\$200,000) dollars each year for twenty years next succeeding January 1st, 1895, the first payment to be made January 1st, 1896; both principal and interest payable at the office of the Treasurer of said Sanitary District at Chicago, Ill.

For all of said bonds, legally and regularly issued, we will pay for four and one-half ($4\frac{1}{2}$) per cent. bonds, principal and interest payable in gold coin of the present standard weight and fineness, 101.33, and interest; or

For four and one-half ($4\frac{1}{2}$) per cent. bonds, principal and interest payable in lawful currency of the United States, 100.39, and interest; or

For five (5) per cent. bonds, principal and interest payable in gold coin of the

present standard of weight and fineness, 104.38, and interest; or

For five (5) per cent. bonds, principal and interest payable in lawful currency of the United States, 103.67, and interest.

Enclosed please find certified check for an amount covering three (3) per cent. of the highest bid.

Yours truly,

(Signed) J. & W. SELIGMAN & Co."

(5.) "NEW YORK LIFE INSURANCE }
COMPANY,
NEW YORK, January 7th, 1895. }

To the Board of Trustees of the Sanitary District of Chicago, Ill:

GENTLEMEN—For \$4,000,000 Sanitary District $4\frac{1}{2}$ per cent gold bonds in denominations of \$1,000 each, with interest payable semi-annually on the first day of January and July in each year, principal payable at the rate of \$200,000 each year, for the twenty years next succeeding January 1st, 1895, both principal and interest payable at the office of the Treasurer of said Sanitary District at Chicago, this company bids 101.31 and accrued interest.

For the same bonds, principal and interest payable in lawful currency, this company bids 100.50 and accrued interest.

For the same bonds, principal and interest payable in gold, interest at the rate of 5 per cent, this company bids 104.53 and accrued interest.

For the same bonds payable in lawful currency, interest at the rate of 5 per cent, this company bids 103.65 and accrued interest.

This bid is for the entire issue or none.

We enclose herewith certified check for 3 per cent of the highest bid, (\$125,500).

This bid is for the \$4,000,000 bonds, for which in accordance with your advertisement, bids are to be opened at 12 o'clock noon, January 9th, 1895.

Yours truly,

(Signed) EDWARD N. GIBBS,
Treasurer."

(6a.) "CHICAGO, January 9th, 1895.
To the Honorable Board of Trustees of the Sanitary District of Chicago:
GENTLEMEN—For four million dollars

(\$4,000,000) bonds of the Sanitary District of Chicago, for which you have advertised to receive proposals this day, dated, maturing and delivered in accordance with the terms of the attached advertisement, to be regularly and legally issued and payable in currency under authority of proper ordinance, and bearing four and one-half ($4\frac{1}{2}$) per cent. interest, we will pay par and accrued interest to delivery, and a premium of \$12,640.

Certified check herewith for one hundred and twenty thousand dollars (\$120 000).

Yours truly,

(Signed) N. W. HARRIS & Co.

On behalf of a syndicate composed of the following:

First National Bank, Chicago.
Blair & Co., New York.
Kuhn, Loeb & Co., New York.
Lee, Higginson & Co., Boston.
Brewster, Cobb & Estabrook, Boston.
R. L. Day & Co., Boston.
N. W. Harris & Co., Chicago."

(6b.) "CHICAGO, January 9th, 1895.

To the Honorable Board of Trustees of the Sanitary District of Chicago, City:

GENTLEMEN—For four million (\$4,000,000) dollars bonds of the Sanitary District of Chicago, for which you have advertised to receive proposals this day, dated, maturing and delivered in accordance with the terms of the attached advertisement, to be regularly and legally issued and payable in gold under authority of proper ordinance and bearing four and one-half ($4\frac{1}{2}$) per cent interest. We will pay par and accrued interest to delivery, and a premium of \$53,333.

Certified check herewith for one hundred and twenty thousand (\$120,000) dollars.

Yours truly,

(Signed) N. W. HARRIS & Co.

On behalf of a syndicate composed of the following:

First National Bank, Chicago.
Blair & Co., New York.
Kuhn, Loeb & Co., New York.
Lee, Higginson & Co., Boston.
Brewster, Cobb & Estabrook, Boston.
R. L. Day & Co., Boston.
N. W. Harris & Co., Chicago."

(6c.) "CHICAGO, 9th January, 1895.

To the Honorable Board of Trustees of the Sanitary District of Chicago, City:

GENTLEMEN—For four million dollars (\$4,000,000) bonds of the Sanitary District of Chicago for which you have advertised to receive proposals this day, dated, maturing and delivered in accordance with the terms of the attached advertisement, to be regularly and legally issued and payable in currency under authority of proper ordinance and bearing five (5) per cent interest, we will pay par and accrued interest to delivery, and a premium of \$111,001.

Certified check herewith for one hundred and twenty thousand dollars (\$120,000).

Yours truly,

(Signed) N. W. HARRIS & Co.

On behalf of a syndicate composed of the following:

First National Bank, Chicago.
Blair & Co., New York.
Kuhn, Loeb & Co., New York.
Lee, Higginson & Co., Boston.
Brewster, Cobb & Estabrook, Boston.
R. L. Day & Co., Boston.
N. W. Harris & Co., Chicago."

(6d) "CHICAGO, January 9th, 1895.

To the Honorable Board of Trustees of the Sanitary District of Chicago, City:

GENTLEMEN—For four million dollars (\$4,000,000) bonds of the Sanitary District of Chicago, for which you have advertised to receive proposals this day, dated, maturing and delivered in accordance with the terms of the attached advertisement, to be regularly and legally issued and payable in gold, under authority of proper ordinance, and bearing five (5) per cent. interest, we will pay par and accrued interest to delivery, and a premium of \$153,333.

Certified check herewith for one hundred and twenty thousand dollars (\$120,000).

Yours truly,

(Signed) N. W. HARRIS & Co.,

On behalf of a syndicate composed of the following:

First National Bank, Chicago.
Blair & Co., New York.
Kuhn, Loeb & Co., New York.
Lee, Higginson & Co., Boston.
Brewster, Cobb & Estabrook, Boston.
R. L. Day & Co., Boston.
N. W. Harris & Co., Chicago."

(7.) "CHICAGO, January 9th, 1895.
Honorable Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—For the proposed issue of bonds of the Sanitary District of Chicago, to be dated February 1st, 1895, bearing interest at the rate of 5 per cent per annum, principal and interest payable in gold coin of the present standard of weight and fineness, and otherwise described in your advertisement, we offer 102 $\frac{164}{1000}$ and accrued interest in addition thereto, which is \$1021.64 for each \$1,000 bond and accrued interest in addition thereto. Bonds to be legally and regularly issued. Total for \$4,000,000, \$4,086,560 and accrued interest.

We will arrange for delayed deliveries, if preferable to you.

We severally agree to take bonds in amounts opposite our names, and in accordance with terms of your advertisement enclose herewith the required 3 per cent.

E. H. Gay & Co., Boston and Chicago.....	\$1,000,000
Dorr & Co., Boston.....	1,000,000
E. H. Rollins & Sons, Boston and Chicago.....	1,500,000
Spitzer & Co., Toledo and Boston	500,000

Respectfully,

E. H. GAY & CO.,
By W. MacDONALD.

DORR & CO.,
By W. J. MacDONALD.

E. H. ROLLINS & SONS,
By GEORGE H. TAYLOR.

SPITZER & CO."

(8) "CHICAGO, Jan. 9th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—We beg leave to submit the following bid, namely: We will pay par (100), accrued interest to date of delivery, and a premium of forty-six dollars and sixty-six cents (\$46 $\frac{66}{100}$) for each one thousand dollar (\$1,000) bond, for five hundred thousand (\$500,000) dollars on bonds of your District, of average maturities, bearing five per cent (5 per cent) interest, and payable, both principal and interest, in gold coin of the present standard of weight and fineness, as per your advertisement attached.

Please find check herewith for fifteen

thousand (\$15,000) dollars, to cover amount required by advertisement.

Yours truly,

(Signed) FARSON, LEACH & Co.

Our present plans contemplate our being able to take the balance of the issue—three million five hundred thousand (\$3,500,000) dollars—at the same price, within twenty-four hours, and we will give you an answer within said time. Please find check herewith for one hundred five thousand (\$105,000) dollars, to cover amount required by advertisement.

(Signed) F. L. & Co."

BIDS FOR BONDS REFERRED TO COMMITTEE ON FINANCE, AND ADJOURNMENT TO SPECIAL TIME.

Mr. Eckhart, seconded by Mr. Boldenweck, then moved that the bids for the \$4,000,000 bonds, as read and shown above, be tabulated, printed and referred to the Committee on Finance, with instructions to report back to the Board at an adjourned meeting to be held Friday, January 11, 1895, at 1:30 o'clock P. M., and that when the Board adjourn, it do adjourn to meet at that time.

The motion prevailed unanimously, and it was so ordered.

ORDER FOR PAYMENT FOR "ALLEN, LOUGHRAN ET AL. LANDS."

Mr. Eckhart, Chairman, on behalf of the Joint Committee on Finance and Engineering, presented an order, authorizing and directing the Clerk to pay James Martin, County Treasurer of Will County, Illinois, on the voucher of the Attorney, a certain sum as a deposit for right of way lands in Will County, owned by Chester Ailen, Michael Loughran et al., as provided in the order; and the order was read.

Mr. Eckhart, seconded by Mr. Kelly, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the order adopted, and the Clerk authorized and directed to pay James Martin, County Treasurer of Will County, Illinois, on the voucher of the Attorney, a certain sum as a deposit for right of way lands in Will County, owned by Chester

Allen, Michael Loughran, et al., as provided in the order.

The following is

THE ORDER:

"*Ordered*, That the Clerk of this District be and he is hereby authorized and directed to pay on the voucher of the Attorney to James Martin, County Treasurer of Will County, Illinois, the sum of \$21,309.50, said sum to be held on deposit by said County Treasurer for the use and benefit of the owners of or persons interested in, certain lands and property hereinafter described, situated in the said Will County, pursuant to the order of judgment of the Circuit Court of Will County, Illinois, entered on the eighth day of January, A. D., 1895, in certain condemnation proceedings then pending in said court, being case, No. 15,007, entitled Sanitary District of Chicago vs. Chester Allen et al, said sum being the aggregate of the amounts awarded by the verdict of the jury and the aforesaid order of judgment as damages for land not taken and as compensation for the taking of the following described lands, to-wit:

Lots, Nos. five (5) and six (6) in the northeast quarter (N. E. $\frac{1}{4}$) of the Subdivision of the west half (W. $\frac{1}{2}$) of Section twenty-two (22), and the east (E.) fraction of the northeast quarter (N. E. $\frac{1}{4}$) and the west (W.) part of the west (W.) fraction of the northeast quarter (N. E. $\frac{1}{4}$) of Section twenty-two (22), township thirty six (36) north, range ten (10) east of the Third Principal Meridian, in the Town of Lockport, Will County, Illinois; said premises being shown more fully by the plat attached to and made part of the order of judgment aforesaid; said premises being designated on said plat by the Tract Nos. 33 and 33a; said Tracts being bounded on the west (W.) by the half ($\frac{1}{2}$) section line of said Section twenty-two (22)."

ADJOURNMENT.

On motion of Mr. Kelly, seconded by Mr. Eckhart, the Board then adjourned to meet Friday, January 11, 1895, at 1:30 o'clock, P. M., pursuant to motion.

THOS. F. JUDGE,

Clerk.

ADJOURNED MEETING.

The adjourned session of the two hundred and fifty-fifth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Friday, January 11, 1895, at 1:30 o'clock, P. M., pursuant to motion.

President Wenter called the Board to order.

On roll-call Messrs. Boldenweck, Eckhart, Kelly, Russell and Wenter—five (5) members, were present.

ORDINANCE FOR \$4,000,000 OF 4½ PER CENT CURRENCY BONDS—FOURTH ISSUE.

Mr. Eckhart, Chairman of the Committee on Finance, presented an ordinance, providing for the issue of \$4,000,000 of 4½ per cent currency bonds, for the corporate purposes of the District; and the ordinance was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved the passage of the ordinance.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Eckhart, Kelly, Russell and Wenter—five (5). Nays—None.

Upon which result the President declared the motion carried, and the ordinance passed.

The following is

THE ORDINANCE:

"*Be it ordained by the Board of Trustees of the Sanitary District of Chicago:*

SECTION 1. That there be borrowed the sum of four million (\$4,000,000) dollars for the corporate purposes of the Sanitary District of Chicago, and that interest-bearing coupon bonds be issued therefor to the amount of four million (\$4,000,000) dollars by said Sanitary District of Chicago, said bonds to be of the denomination of one thousand (\$1,000) dollars each, all to bear date of the first day of February, 1895. Two hundred thousand (\$200,000) dollars of the principal of said bonds to be payable on the first day of January of the year 1896, and of each of the years thereafter following until and including the year 1915; said bonds to be numbered consecutively from from eight thousand and one (8001) to twelve thousand (12,000) inclusive, and to bear interest at the rate of four and one-half (4½) per centum per annum from the

date thereof. Interest to be payable on the first day of July and of January in each year and to be evidenced by coupons attached to each bond, to be numbered consecutively, each coupon to bear the number of the bond to which it is attached, and to be for the sum of twenty-two and fifty one-hundredths (\$22.50) dollars, (except the first coupon on each bond of this issue which shall be for the sum of eighteen and seventy-five one hundredths (\$18.75) dollars,) and the first, or No. one (1) coupon of each bond to be payable on the first day of July 1895, and the next, or No. two (2) coupon on each bond to be payable on the first day of January, 1896, and so on, each succeeding coupon being payable six (6) months after the preceding one, both principal and interest to be payable at the office of the Treasurer of the Sanitary District of Chicago, interest to be payable only upon presentation and surrender of the proper interest coupons. Such bonds shall be signed on behalf of the Sanitary District of Chicago, by the President of the Board of Trustees and countersigned by the Clerk thereof, and attested by the seal of said Sanitary District.

SECTION 2. That said bonds, when they are executed, shall be deposited with the Treasurer of said District for safe keeping, and shall be sold at such price, and for such rates as the Board of Trustees of this District shall, from time to time, determine and direct, and the proceeds arising from the sale of said bonds shall be received by the Treasurer of said District as such; and shall be used for the corporate purposes thereof, as may be directed, from time to time, by the Board of Trustees.

SECTION 3. That in each of the herein-after mentioned years there shall be levied and assessed on the taxable property within said District, the sums respectively as follows:

For the year 1895, three hundred and eighty thousand (\$380,000) dollars.

For the year 1896, three hundred and seventy-one thousand (\$371,000) dollars.

For the year 1897, three hundred and sixty-two thousand (\$362,000) dollars.

For the year 1898, three hundred and fifty-three thousand (\$353,000) dollars.

For the year 1899, three hundred and forty-four thousand (\$344,000) dollars.

For the year 1900, three hundred and thirty-five thousand (\$335,000) dollars.

For the year 1901, three hundred and twenty-six thousand (\$326,000) dollars.

For the year 1902, three hundred and seventeen thousand (\$317,000) dollars.

For the year 1903, three hundred and eight thousand (\$308,000) dollars.

For the year 1904, two hundred and ninety-nine thousand (\$299,000) dollars.

For the year 1905, two hundred and ninety-thousand (\$290,000) dollars.

For the year 1906, two hundred and eighty-one thousand (\$281,000) dollars.

For the year 1907, two hundred and seventy-two thousand (\$272,000) dollars.

For the year 1908, two hundred and sixty-three thousand (\$263,000) dollars.

For the year 1909, two hundred and fifty-four thousand (\$254,000) dollars.

For the year 1910, two hundred and forty-five thousand (\$245,000) dollars.

For the year 1911, two hundred and thirty-six thousand (\$236,000) dollars.

For the year 1912, two hundred and twenty-seven thousand (\$227,000) dollars.

For the year 1913, two hundred and eighteen thousand (\$218,000) dollars.

For the year 1914, two hundred and nine thousand (\$209,000) dollars.

For the purpose of paying the principal and interest of the bonds issued under this ordinance, said sums so levied being sufficient to pay the interest on said bonds as it falls due, and also to pay and discharge the principal thereof as the same shall fall due; and the Clerk of this District is hereby directed in the year 1895 and in each of the years thereafter, until and including the year 1914, to include the amount required by this ordinance to be raised by taxes in each of said years respectively in the amount which shall be certified to the County Clerk in each of said years as the amount required to be raised by taxation in said District.

SEC. 4. Bonds to be issued in pursuance of this ordinance may be registered with the Treasurer of said District, and after such registry, no transfer shall be valid, except upon the books of said Treasurer, but the registry thereafter upon the books of the Treasurer of a transfer to bearer shall restore transferability by delivery;

said bonds shall continue subject to successive registrations and transfers to bearer as aforesaid, at the option of each holder.

SEC. 5. That the credit and resources of the Sanitary District of Chicago be and the same are hereby irrevocably pledged to the payment of the bonds which shall be issued in pursuance of this ordinance, and the interest thereon as it shall fall due.

SEC. 6. This ordinance shall take effect and be in force from and after its passage."

REPORT ON ALTERNATIVE BIDS FOR \$4,-
000,000 BONDS—FOURTH ISSUE.

Mr. Eckhart, Chairman, presented a report from the Committee on Finance, with reference to the bids for bonds received and referred to that Committee at the meeting held January 9, 1895 (page 2423 of the Proceedings), recommending that the bid of the New York Life Insurance Company, of New York, for the purchase of the entire issue of \$4,000,000 $4\frac{1}{2}$ per cent currency bonds of the District (being the fourth issue) be accepted, and that the checks of each and all of the other bidders be returned, as provided in the report, said report being accompanied by all the bids and by an agreement, in duplicate, between the New York Life Insurance Company and the District, and further recommending that the President and Clerk be authorized and directed to execute the said agreement, on behalf of the District, as provided in the report; and the report was read.

Mr. Eckhart, seconded by Mr. Russell, moved that the report and accompanying agreement be adopted, ordered printed and with all enclosures placed on file, the recommendations made in the report concurred in, the President and Clerk authorized and directed to execute the said agreement on behalf of the District, and the Clerk directed to have said bonds engraved and printed in the usual manner, under the direction of the Committee on Finance.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Eckhart, Kelly, Russell and Wenter—five (5). Nays—None.

Upon which result the President declared the motion carried, the report and accompanying agreement adopted, ordered printed, and with all enclosures placed on file, the recommendations made in the report concurred in, the President and Clerk

authorized and directed to execute the said agreement on behalf of the District, and the Clerk directed to have said bonds engraved and printed in the usual manner, under the direction of the Committee on Finance.

The following is

THE REPORT AND ACCOMPANYING AGREEMENT:

"CHICAGO, Jan. 11, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—The Committee on Finance, to whom your Honorable Body, at its meeting held January 9, 1895, referred the bids for the purchase of \$4,000,000 of the bonds of this District, being the fourth issue and being for alternative tenders of $4\frac{1}{2}$ per cent and 5 per cent currency and $4\frac{1}{2}$ per cent and 5 per cent gold bonds, have carefully considered the same and now recommend that the bid of the New York Life Insurance Company, of New York, for $4\frac{1}{2}$ per cent currency bonds, at 100%, or a premium of \$20,000.00, being the highest unconditional bid for the whole issue of said bonds as currency bonds, and in other respects the most favorable to the District, be accepted, and that the President and Clerk be authorized and instructed to execute, on behalf of the District, with the said New York Life Insurance Company, the contract transmitted herewith for the delivery of said bonds.

After a careful consideration of the whole matter, the Committee decided that it would not be wise at this time to change the policy of the District by issuing a gold instead of a currency bond, and that the small increase in premium to be secured by making the bonds and interest payable in gold, would not justify a change in policy.

The Committee calls the attention of the Board to the reduction in the rate of interest, brought about by the present bids, from 5 per cent to $4\frac{1}{2}$ per cent, making a saving to the District of \$210,000 interest in the $10\frac{1}{2}$ year average life of the issue, the premium of \$20,000 received reducing the actual interest rate from $4\frac{1}{2}$ per cent to 4 435 1000 per cent.

The Committee congratulate the Board on the number of bids received, the high

character of the bidders, and the favorable offers received for the issue, which indicates that the credit of the District is steadily advancing, since the last bids offered the highest premium ever tendered the District.

Your Committee further recommends that the Clerk be instructed to return to each and all of the bidders except the New York Life Insurance Company, the checks deposited by them with their bids for said bonds. The bids are herewith returned for filing.

Respectfully submitted,

(Signed) B. A. ECKHART.

Chairman.

W. H. RUSSELL,

THOMAS KELLY,

Committee on Finance."

(Accompanied by eight (8) bids and agreement in duplicate).

(THE AGREEMENT)

"*This Agreement, Made and entered into this eleventh day of January, A. D. 1895, by and between the Sanitary District of Chicago, a corporation, party of the first part, and the New York Life Insurance Company, a corporation, of the second part,*

Witnesseth, That said party of the first part does hereby covenant, contract and agree, for the consideration hereinafter set forth, to issue and deliver to said party of the second part, at the office of the Treasurer of first party, in Chicago, Illinois, four million (\$4,000 000) dollars worth of interest bearing coupon bonds; said bonds to be of the denomination of one thousand (\$1,000) dollars each; all of said bonds to bear date the first day of February, A. D. 1895, and to bear interest at four and one-half ($4\frac{1}{2}$) per cent per annum, from date thereof, payable semi-annually; said bonds to be payable at the times, in the sums and upon the terms and conditions set forth in an ordinance passed by the Board of Trustees of said Sanitary District, on January eleventh (11th), 1895.

In consideration of the issue and delivery of said bonds, as above set forth, said party of the second part hereby covenants, contracts and agrees to pay and give for said bonds par, a premium of twenty thousand (\$20,000) dollars, and all interest accrued on said bonds to the date of delivery; and

they further agree to receive and pay for said bonds at the above rate on the following dates, and in the following amounts, to-wit:

Two million (\$2,000,000) dollars and accrued interest on or about February 5th, 1895, and two million (\$2,000,000) dollars and accrued interest on or before February 15th, 1895.

The party of the first part agrees to have said bonds ready for delivery in said respective amounts not later than the dates aforesaid.

It is understood by and between the parties hereto that said party of the second part may, at its option, call for and have delivered to it, at the time of either delivery of bonds hereunder, bonds of any maturities, provided the average maturities so called for do not exceed the average maturity of the four million (\$4,000,000) dollars of bonds covered by this contract.

It is further agreed by the parties hereto that upon each delivery of said bonds, as aforesaid, said party of the second part shall pay one-half ($\frac{1}{2}$) of said premium of twenty thousand (\$20,000) dollars.

It is further agreed by the parties hereto that the one hundred and twenty thousand (\$120,000) dollars certified check, which has been deposited with the Clerk of the party of the first part by said party of the second part shall be held by said Clerk until the first delivery of bonds hereunder.

And that then there shall be refunded to second party one-half ($\frac{1}{2}$) the amount of said check, and on the delivery to second party of the remainder of said bonds, the remainder of the amount of said check shall also be paid to it.

It is further covenanted and agreed by said party of the first part that the bonds herein mentioned shall be legally and regularly issued by it. This contract is executed in duplicate.

In Witness Whereof, On the day and year first above written, the parties hereto have caused these presents to be signed by their respective officers, thereunto duly authorized, and their respective corporate seals to be hereunto affixed," etc.

ADJOURNMENT.

On motion of Mr. Boldenweck, seconded by Mr. Russell, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS

—OF THE—

BOARD OF TRUSTEES

—OF THE—

SANITARY DISTRICT OF CHICAGO.

JANUARY 16, 1895.

OFFICIAL RECORD.

(Published by authority of the Board of Trustees of the Sanitary District of Chicago.)

REGULAR MEETING.

The two hundred and fifty-sixth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, January 16, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Cooley, Eckhart, Kelly, Russell and Wenter—five (5) members, were present.

MINUTES.

The minutes of the regular meetings held January 2 and 9, 1895, and of the adjourned session of the regular meeting

of January 9, 1895, held January 11, 1895, were approved as printed, on motion of Mr. Kelly, seconded by Mr. Eckhart.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

Construction Account—

Heldmaier & Neu, (Sec. A, extra work—completing Levees 692 to 710 and below 710, Jan. 1, 1895).....	\$1,206 00
Chicago and Calumet Terminal Ry. Co. (extra work—raising Calumet Terminal bridge and roadbed, Dec. 31, 1894—final).	49 43
	<u>\$1,255 43</u>

ENGINEERING DEPARTMENT.

Geo. Brainard, (gauge

reading, Dec., 1894)...	\$10 00	
E. Hastings, (gauge reading, Dec., 1894)...	10 00	
Wm. Kirkham, (gauge reading, Dec., 1894)...	10 00	
Wm. McGinnis, (gauge reading, Dec., 1894)...	10 00	
Mary Rusk, (gauge reading, Dec., 1894)...	10 00	
H. A. Miller, (traveling).....	15 55	
Chas. L. Harrison, (traveling).....	6 15	
W. T. Keating (traveling).....	20 54	
Wm. Kramer (traveling).....	2 45	
		\$ 94 69

LAW DEPARTMENT.

Geo. Hingston, (steno-grapher, Will County cases).....	\$122 15	
D. & F. Murphy, (liv-ery).....	26 50	
Haley & O'Donnell, (expense).....	20 25	
Geo. E. Dawson, (ex- pense, expert wit- nesses).....	586 98	
Geo. E. Dawson, (ex- pense, expert wit- nesses).....	586 50	
		\$1,292 38

GENERAL ACCOUNT.

<i>The Tribune Co.</i> (ad- vertising Sec. F and bonds).....	\$54 00	
<i>The Chicago Herald</i> <i>Co.</i> (advertising Sec. F and bonds).....	57 30	
<i>The Chicago Evening</i> <i>Post Co.</i> (advertising Sec. F and bonds)....	39 00	
<i>The Chicago Daily</i> <i>News Co.</i> (advertis- ing Sec. F and bonds)	52 50	
Victor F. Lawson, Pub- lisher, <i>Chicago Re-</i> <i>cord.</i> (advertising Sec. F and bonds)...	35 00	
<i>The Inter Ocean.</i> (ad- vertising Sec. F and bonds).....	27 75	
<i>The Chicago Dispatch.</i> (advertising Sec. F and bonds).....	37 20	
John R. Wilson, Pub- lisher, <i>Chicago Eve-</i> <i>ning Journal.</i> (ad- vertising Sec. F and bonds).....	28 95	
<i>Illinois Staats Zeitung</i> <i>Co.</i> (advertising Sec. F and bonds).....	26 26	
<i>The At-denpost Co.</i> (ad- vertising Sec. F and bonds).....	22 50	
<i>Chicago Arbeiter Zei-</i> <i>tung Publishing Co.</i> (advertising Sec. F and bonds).....	21 00	

<i>Daily Svornost.</i> (ad- vertising Sec. F and bonds).....	\$ 17 50	
<i>The Engineering Re-</i> <i>cord.</i> (advertising Sec. F).....	34 80	
		\$ 453 76

POLICE DEPARTMENT.

P. F. Pettibone & Co. (stationery).....	\$ 1 15	
Daniel E. Tracy, (horse shoeing).....	9 25	
M. Paterson (typewrit- ing).....	4 20	
Stephenson & Keller, (hay and feed).....	7 26	
Bohanon Carriage Co. (repairing buggy)....	70 30	
Thomas Ludwig, (sun- dry repairs).....	95 35	
Edward Williams, (ex- pense).....	62 12	
Wanzer & Co. (oats)...	294 17	
		\$ 543 80
Grand total.....		\$3,640 06

Mr. Eckhart, seconded by Mr. Kelly, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Cooley, Eckhart, Kelly, Russell and Wenter—five (5). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending January 12, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, Jan. 16, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—I beg leave to report here-
with the number of employes in each
department for the week ending Janu-
ary 12, 1895, as the same have been re-
ported to me:

Engineering Department.....	135
Clerical Department.....	4
Treasury Department.....	1

Law Department.....	7
Police Department.....	48
Telephone operator.....	1

Total employes..... 196

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

ANNUAL REPORT OF CLERICAL DEPARTMENT FOR 1894.

The Clerk presented the annual report of the Clerical Department, accompanied by five (5) tables, for the year ending December 31st, 1894; and the report was read.

Mr. Eckhart, seconded by Mr. Russell, moved that the report, with accompanying tables, be ordered printed and referred to the Committee on Finance.

The motion prevailed unanimously, and the report, with accompanying tables, was ordered printed and so referred.

The following is

THE ANNUAL REPORT:

"CHICAGO, January 15, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have the honor to herewith submit, in accordance with the rules of your Honorable Body, the Annual Report of this Department for the year ending December 31, 1894.

During the year there were issued and delivered the second and third issues of bonds of the District, each being \$3,000,000 of 5 per cent currency bonds, making the total District bond issue to date \$8,000,000, of which \$350,000 has been retired to this time.

The entire second issue of \$3,000,000 of 5 per cent bonds of the District, sold to Messrs. N. W. Harris & Company of Chicago, on December 13, 1893, were delivered and paid for during the month of January, 1894.

On June 10, 1894, the District advertised the sale of \$3,000,000 of 4 per cent currency bonds to be the third issue, but the bids opened on July 11, 1894, not being satisfactory, owing to the unsettled conditions and industrial unrest then prevailing, were, in accordance with the terms of the

advertisement, all rejected; and on August 1, following, the District again advertised for bids for the sale of \$3,000,000 of 5 per cent currency bonds, the third issue, and bids for the same were opened on the fifteenth day of that month.

Seven (7) bids, all being above par, were received, and the entire issue was sold to Messrs. N. W. Harris & Company of Chicago, the highest bidders, whose premium bid was \$17,121, or $100\frac{57.07}{100.00}$. The first delivery for portion of this issue was to be on or before September 1, 1894, and was for \$1,000,000, with the option of taking the balance at the same time. On August 29, 1894, I handed the entire completed issue to the Treasurer, and the same were immediately thereafter paid for and delivered to the purchasers.

During the year there was paid as interest on outstanding bonds, \$307,500, being \$95,000 on the first issue, \$150,000 on the second issue and \$62,500 on the third issue thereof. There were also paid and canceled \$100,000 of the first issue of bonds, and \$150,000 of the second issue, the same being the regular yearly one-twentieth (1-20) of each issue then maturing, and making a total of \$350,000 retired to date.

The tax levy for 1893, together with several small collections of back taxes, etc. (\$220.36), brought in a net total of \$1,148,607.21. The tax levy for 1894 will, it is hoped, yield the District a sum in excess of that received last year, the exact figures of the valuation not yet being obtainable. It is to be hoped that the ridiculously low assessed valuation of the property within the Sanitary District of Chicago will be largely increased, if not this year, at least the year following, so that the District may receive from its tax levy an amount of money commensurate with its needs.

During the year, there was received from depositories, as interest on balances of District funds, \$47,127.86, making a total received from this source to December 31, 1894, of \$130,938.67.

During 1894, there was expended for construction the sum of \$4,353,147.97, or more than twice as much as during the previous year, bringing the total expended during the three years up to \$7,107,336.38.

There was expended for right of way during the year \$525,501.74, practically completing the line at present under con-

tract, and making a total of \$2,407,161.63, to be credited against which there are receipts for warrants re deposited and from sundry sources, to the amount of \$35,305.03.

The total receipts of the District, from organization to December 31, 1894, have been \$12,781,225.71, the receipts for the last year being \$7,399,367.93, and the total expenditures of the District to December 31, 1894, have been \$11,478 639.68, those for the last year being \$6,292,134.85, leaving a balance on hand of \$1,302,586.03.

On January 24, 1894, I returned to the Engineering Department Construction Account the \$80,000 Emergency Fund placed in my hands in September, 1893, for the payment of agents and employes on the Special River Diversion Work, giving labor to the unemployed of the city of Chicago.

I estimate the expenses on account of the Clerical Department during the year of 1895 will be under the sum of \$12,000, and for the General Account, under the sum of \$60,000, the same as estimated for last year.

In the five (5) tables attached hereto will be found an account by months and funds of the receipts and disbursements of the Sanitary District during the past year, and a summary of the same. There will also be found a summary of the total receipts and expenditures of the District by years and funds, from February 1, 1890, to and including December 31, 1894.

I desire to express to the members of the Board and to the officers of the District my appreciation of favors extended this Department during the past year, which have facilitated the business of the Department, and to congratulate the Board on the excellent progress which the work has made since the last reports, which I believe is creditable to all concerned in therein.

Respectfully submitted,

(Signed)

THOS. F. JUDGE,
Clerk."

(Accompanied by five (5) tables.)

CLERK'S FINANCIAL STATEMENT.

RECEIPTS AND EXPENDITURES—SANITARY DISTRICT OF CHICAGO, 1894.

Receipts.

Balance on hand, January 1, 1894.....		\$ 195,352 95
Engineering Department (Towpath repairs, Sections G, H, I and K).....	\$ 364 00	
Engineering Department, Construction account (Emergency Fund returned, etc.).....	80 041 60	
Tax account (taxes 1893, etc.).....	1,148 607 21	
Interest account (bank balances).....	47,127 86	
Bond account (sale of bonds).....	6,000,000 00	
Bond Interest and Premium account (sale of bonds).....	84,778 38	
Law Department (Emergency Fund returned, etc.).....	1,790 00	
Law Department, Land account (sale of buildings, Tully voucher redeposited, etc.).....	31,682 88	
General account (rent, etc.).....	4,976 00	
Total.....		<u>\$7,399,367 93</u>
Grand total.....		<u><u>\$7,594,720 88</u></u>

Expenditures.

Engineering Department.....	\$ 185 496 30	
Engineering Department, Construction account.....	4,858,147 97	
Clerical Department.....	10,829 94	
Treasury Department.....	2,053 40	
Law Department.....	45,502 80	
Law Department, Land account.....	525,501 74	
General account.....	55,918 65	
Bond account.....	250,000 00	
Bond Interest and Premium account.....	307,500 00	
Police Department.....	51,184 05	
Total.....		<u>\$6,292,134 85</u>
*Balance on hand December 31, 1894.....		1,302 586 03
Grand total.....		<u><u>\$7,594,720 88</u></u>

NOTE—

*There are outstanding warrants reported unpaid by the Treasurer to the amount of.....	\$ 15,934 16
Which added to the above balance of.....	1,302,586 03
Shows the Treasurer's balance of.....	<u><u>\$1,318,520 19</u></u>

There are also Emergency Funds in the hands of the following officers:

Clerk.....	{ Discharged Men's Fund, Engineering Department.....	\$ 400 00	
	{ Discharged Men's Fund, Construction account.....	1 000 00	
			<u>\$1,400 00</u>
Attorney, Emergency Fund, Law Department.....			1,500 00
Chief Engineer, Emergency Fund, Engineering Department.....			3,000 00
Total, Emergency Funds.....			<u><u>\$5 900 00</u></u>

RECEIPTS—SANTARY DISTRICT OF CHICAGO—FROM JANUARY 1, 1894 TO DECEMBER 31, 1894.

MONTHS—1894.		Eng. Dept.	Eng. Dept. Constr. et'n Acct.	Law Dept.	Tax Account.	Bond Account.	Bond Int. and Prem. Acct.	Law Dept. Land Account.	Interest Account.	General Account.	Totals.
January.....		\$20,496 24	\$80,000 00		\$ 20,435 00	\$3,000,000 00	\$55,739 38	\$ 325 00	\$5,178 07	\$3,000 00	\$3,144,242 45
February.....		13,813 96	244,451 33		57,052 31				5,680 98		26,115 98
March.....		3,369 90	214,469 76		273,682 49			1,682 74	4,576 13	150 00	63,502 78
April.....		13,654 29	288,060 42		50,000 00				4,137 60	120 00	277,940 00
May.....		14,400 81	394,496 17		100,000 00			641 64	3,507 64		54,239 28
June.....		29,279 09	438,308 61		150,000 00			22,246 00	2,895 78	150 00	152,231 78
July.....		726 71	531,074 73		100,000 00				2,318 82		137,348 82
August.....		14,938 90	550,482 77		100,000 00	3,000,000 00	29,039 00	6,787 50	1,382 85		3,137,349 85
September.....		15,851 88	559,382 26		100,000 00			100,000 00	5,385 80	270 00	105,665 80
October.....		30,528 56	504,928 98		200,000 00				4,959 58		206,234 58
November.....		1,648 58	502,413 36		97,437 41				3,740 29	1,250 00	103,942 70
December.....		27,787 38	445,621 48						3,164 32	36 00	3,564 32
Totals.....		\$185,406 30	\$4,858,147 97	\$1,790 00	\$1,148,607 21	\$6,000,000 00	\$84,778 38	\$31,682 88	\$47,127 86	\$4,376 00	\$7,399,367 93

EXPENDITURES—SANTARY DISTRICT OF CHICAGO—FROM JANUARY 1, 1894 TO DECEMBER 31, 1894.

MONTHS—1894.		Eng. Dept.	Eng. Dept. Construction Account.	Clerical Dept.	Treas. Dept.	Law Dept.	Law Dept. Land Account.	General Acct.	Bond Account.	Bond Int. and Prem. Acct.	Police Dept.	Totals.
January.....		\$20,496 24	\$194,458 08	\$1,654 66	\$352 33	\$6,140 39	\$ 37,538 00	\$10,228 97			\$5,801 95	\$276,060 62
February.....		13,813 96	244,451 33	950 19	166 67	5,610 88	30,011 00	2,998 81			3,357 49	300,200 35
March.....		3,369 90	214,469 76	16 50		490 73	290,457 00	639 33			20 28	479,463 50
April.....		13,654 29	288,060 42	902 25	166 67	4,365 00		6,101 65		\$47,500 00	4,782 63	365,533 00
May.....		14,400 81	394,496 17	181 16		3,165 26	33,133 92	4,010 84			3,392 85	453,707 18
June.....		29,279 09	438,308 61	1,791 57		7,584 62	53,634 10	6,043 93			8,122 95	610,098 21
July.....		726 71	531,074 73	1,791 57		1,002 51	20,320 86	316 64			243 99	553,692 94
August.....		14,938 90	550,482 77	942 01	166 66	2,702 14	34,763 99	6,040 06			5,963 20	616,353 73
September.....		15,851 88	559,382 26	896 16	166 67	4,112 97	52,340 84	5,622 00			4,004 91	642,377 69
October.....		30,528 56	504,928 98	1,838 51	353 23	6,119 51	1,495 46	8,170 61			7,603 78	708,538 64
November.....		1,648 58	502,413 36	4 50		215 47	1,826 57	950 27			741 56	507,800 31
December.....		27,787 38	445,621 48	899 92	166 67	3,993 23		4,491 54			7,248 46	777,708 68
Totals.....		\$185,406 30	\$4,858,147 97	\$10,829 94	\$2,063 40	\$45,502 80	\$525,501 74	\$55,918 65	\$250,000 00	\$307,500 00	\$51,184 05	\$6,292,134 85

Chicago, January 15, 1895.

[Signed]

THOS. F. JUDGE, Clerk of the Sanitary District of Chicago.

TOTAL RECEIPTS OF SANITARY DISTRICT OF CHICAGO—FROM FEBRUARY 1st, 1890 TO DECEMBER 31st, 1894.

YEAR.	Engineering Dept.	Eng. Dept—Construction Acct.	Loans.	Tax Account.	Bond Account.	Bond Interest and Premium acct.	Law Department.	Law Dept. Land Acct.	Interest Account.	General Account.	Annual Totals.
1890.....			\$75,000 00						\$ 100 85		\$75,100 85
1891.....	\$1,583 33		25,000 00	\$ 657,360 78					6,053 79		980,897 90
1892.....	348 00			1,022,349 75	\$1,010,000 00	\$17,340 63		\$1,176 50	26,029 18	\$ 20 00	2,077,164 06
1893.....	1,284 74			1,167,097 96	990,000 00	25,920 33		2,445 65	51,626 90	1,320 00	2,239,694 97
1894.....	364 00	\$80,041 60		1,148,607 21	6,000,000 00	84,778 38	\$1,790 00	31,682 88	47,127 86	4,976 00	7,399,367 93
Totals.....	\$3,580 07	\$80,041 60	\$100,000 00	\$4,295,315 00	\$8,009,000 00	\$127,039 34	\$1,790 00	\$35,305 03	\$130,938 67	\$6,316 00	\$12,781,225 71

TOTAL EXPENDITURES OF SANITARY DISTRICT OF CHICAGO—FROM FEBRUARY 1st, 1890 TO DECEMBER 31st, 1894.

YEAR.	Engineering Dept.	Eng. Dept—Construction Acct.	Clerical Dept.	Treasury Dept.	Interest on Loans	Loans.	Law Department.	Law Dept—Land Acct.	General Account.	Bond Account.	Bond Int. and Premium Acct.	Police Dept.	Annual Totals.
1890.....	\$ 61,407 93		\$ 2,912 81	\$ 96 00					\$ 3,232 59				\$ 67,649 33
1891.....	65,999 07		8,818 97		\$2,163 52	\$100,000 00	\$ 33,320 72		57,956 41				298,158 72
1892.....	132,621 12	\$ 151,371 97	7,730 02	1,880 26			39,567 37	\$ 587,972 13	41,126 13				962,269 00
1893.....	154,631 54	2,097,816 44	9,180 32	2,049 50			60,754 25	1,293,687 76	50,189 26	\$100,000 00	\$100,000 00	\$20,148 71	3,888,427 78
1894.....	185,496 30	4,858,147 97	10,829 94	2,053 40			45,502 80	525,501 74	55,918 65	250,090 00	307,500 00	51,154 05	6,292,134 85
Totals.....	\$600,155 96	\$7,107,336 38	\$39,472 06	\$6,049 16	\$2,163 52	\$100,000 00	\$179,045 14	\$2,107,161 63	\$208,423 07	\$350,000 00	\$407,500 00	\$71,332 76	\$11,473,639 68
Balance on hand December 31, 1894.....													\$ 1,392,586 03
Grand Total.....													\$12,781,225 71

CHICAGO, January 15, 1895.

[Signed]

THOS. F. JUDGE, Clerk of the Sanitary District of Chicago.

ANNUAL REPORT OF LAW DEPARTMENT
FOR 1894.

The Clerk presented the annual report of the Law Department for the year ending December 31st, 1894; and the report was read.

Mr. Kelly, seconded by Mr. Cooley, moved that the report be ordered printed and placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE ANNUAL REPORT:

"CHICAGO, Jan. 16th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In accordance with the rules of your Honorable Body, I have the honor to submit herewith the annual report of this Department for the year ending December 31st, 1894.

Under the rules of the Board, this Department is charged with the duty of preparing all papers required by the Board. To it also are naturally referred the various claims and demands which are constantly being made upon the District; claims by owners of property adjoining the right-of-way of the District, for damages to land; claims by contractors for reclassification of material, for work claimed to be extra, for profit for work claimed to be called for under the contract, but which the District does not admit, and a great variety of others.

Also requests by workmen, suppliers of material and machinery, and other creditors, that the District will intervene for the settlement of disputed matters. All these and many other questions of like character require the attention of this Department, to determine the legal basis of the demand and to collect and sift the evidence pertaining to it.

These constitute a large portion of the constant and routine work of the Department.

From the fact that all contracts for the excavation of the Main Channel have now been let, and an average of over forty (40) per cent of the work thereon has already been finished, this routine work has necessarily increased during the year just passed.

In addition thereto there has devolved upon the Department the acquirement of land for right of way, either by pur-

chase or by condemnation proceedings, and such litigation as has resulted from the denial by the District of its liability for claims made upon it, and such as has arisen in connection with the letting of contracts.

During the year 1894, there were begun the following condemnation suits:

Sanitary District of Chicago vs. Chester Allen et al., Circuit Court of Will County, No. 15007.

Sanitary District of Chicago vs. Michael Loughran et al., Circuit Court of Will County, No. 15006.

These included one hundred and ninety-two and thirty-seven one hundredths (192.37) acres of land.

There were tried during the year the following condemnation suits:

Sanitary District of Chicago vs. John R. Cook et al., Circuit Court of Cook County, General No. 118948.

This trial lasted three weeks and resulted in a disagreement of the jury.

It was retried before Judge Gibbons without a jury, resulting in the District paying one-half ($\frac{1}{2}$) more per acre than it paid for adjoining land, and also damages for land not taken.

Sanitary District of Chicago vs. Jindrich et al., in the Circuit Court of Cook County, Gen. No. 123926, embracing eighteen (18) lots in Manchester Subdivision; and the following cases in Will County.

Sanitary District of Chicago vs. Harris, Geddes et al., No. 14677.

Sanitary District of Chicago vs. McWeeney et al., No. 14677.

Sanitary District of Chicago vs. Allen et al., No. 15006.

Sanitary District of Chicago vs. Loughran et al., No. 15007.

These last in Will County include two hundred and eighty and thirty-seven one hundredths (280.37) acres of land.

The following miscellaneous suits, in which the District was a party, either as defendant or plaintiff, were begun during the year:

Cahill vs. Guilford, Sanitary District of Chicago et al., Circuit Court of Cook County, Gen. No. 126471. Chancery.

Chicago, Madison and Northern Railroad Company vs. Sanitary District of Chicago et al., County Court of Cook County, Gen. No. 10897. Condemnation.

Harlev vs. Sanitary District of Chicago, Circuit Court of Cook County, Gen. No. 129058. Chancery.

Johnson vs. Sanitary District of Chicago, Circuit Court of Cook County, Gen. No. 130263. Chancery.

Hibbard vs. Harlev, Sanitary District of Chicago et al., Circuit Court of Cook County, Gen. No. 130336. Chancery.

Objection by Sanitary District of Chicago to taxes on Wilshire tract, County Court of Cook County, No. 4.

Harlev vs. Sanitary District of Chicago, Superior Court of Cook County, Gen. No. 159797. Law.

Blake Manufacturing Company vs. Sanitary District of Chicago, Superior Court of Cook County, Gen. No. 159960. Law.

Coyne et al. vs. Ryan, Sanitary District of Chicago et al., Circuit Court of Cook County, burnt record proceeding. Burnt record, 958.

Allen vs. Sanitary District of Chicago, Circuit Court of Will County, No. 15276. Law.

Sanitary District of Chicago vs. Livingston, Circuit Court of Cook County, Gen. No. 137357. Law.

Objections by Sanitary District of Chicago to taxes, County Court of Will County.

Sanitary District of Chicago vs. Lonergan, Circuit Court of Will County, No. 14953. Law.

Sanitary District of Chicago vs. Adler, Circuit Court of Will County, No. 14952. Law.

The following cases were disposed of during the year:

McNeil, Higgins & Co. vs. McCormick Construction Company and Sanitary District of Chicago, Circuit Court of Cook County, No. 123343. Law.

Crane Company vs. McCormick Construction Company and Sanitary District of Chicago, Circuit Court of Cook County, No. 123345. Law.

William Haas, administrator of John Kern, deceased, vs. Western Stone Company and Sanitary District of Chicago, Circuit Court of Cook County, No. 123366. Law.

Eugenia Crimp vs. McCormick Construction Company and Sanitary District of Chicago, Circuit Court of the United States, No. 23174.

Chicago, Madison & Northern Railroad Co. vs. Sanitary District et al., County Court of Cook County, No. 10897. Condemnation.

Alfred Harlev vs. Sanitary District of Chicago, Circuit Court of Cook County, No. 129058. Chancery.

Ernest V. Johnson et al. vs. Sanitary District et al., Circuit Court of Cook County, No. 130263. Chancery.

Objection to judgment for taxes on Wilshire land, County Court of Cook County. No. 4.

Objection to judgment for taxes on Will County lands, County Court of Will County.

The following suits are pending in the several courts:

Ernest V. Johnson et al. vs. Sanitary District of Chicago, Appellate Court. First District by appeal from Circuit Court of Cook County.

Cahill vs. Guilford and Sanitary District of Chicago, Circuit Court of Cook County. Chancery.

Harlev vs. Sanitary District of Chicago, Circuit Court of Cook County. Chancery.

Hibbard vs. Harlev, Sanitary District of Chicago et al., Circuit Court of Cook County. Chancery.

Harlev vs. Sanitary District of Chicago, Superior Court of Cook County. Law.

Blake Manufacturing Company vs. Sanitary District of Chicago, Superior Court of Cook County. Law.

Coyne et al. vs. Ryan, Sanitary District of Chicago, et al., Circuit Court of Cook County. Burnt record proceeding.

Sanitary District of Chicago vs. Francis Livingston, Circuit Court of Cook County. Law.

Payette vs. Sanitary District of Chicago. Superior Court of Cook County. Law.

Chester S. Allen vs. Sanitary District of Chicago, Circuit Court of Will County. Law.

Sanitary District of Chicago vs. Sanger et al., Circuit Court of Will County. Condemnation.

Sanitary District of Chicago vs. Adler et al., Circuit Court of Will County. Law.

Sanitary District of Chicago vs. Lonergan.

gan et al., Circuit Court of Will County. Law.

The following cases were decided during the year in the Appellate and Supreme Courts, on appeal from the lower courts:

In the Appellate Court of the First District.

Alfred Harlev vs. Sanitary District of Chicago, and Sanitary District vs. John A. Cook et al.

In the Supreme Court.

James Burke et al. vs. Sanitary District of Chicago.

John H. Tedens et al. vs. Sanitary District of Chicago.

In these two cases, re-hearings were asked and denied.

The only appeal case pending is that of Ernest V. Johnson et al. vs. Sanitary District of Chicago, in the Appellate Court of the First District.

In the decisions which have been rendered in the various suits to which the District was a party, among the principles laid down, many of which were but re-affirmations of well established propositions of law, were the following, in which the point passed upon is either new, or has for the first time been applied to the Sanitary District:

The Sanitary District must, of necessity, to a modified extent, be allowed to determine for itself the quantity of land to be taken to be used for its Channel, but it has no right to abuse the power conferred or to take more lands than are reasonably necessary to be used in the construction and maintenance of its drains and outlets.

When the amount of land sought to be taken is claimed to be in excess of a reasonable amount, the land owners will have the right to demand the production in court of the plans and profiles of the proposed improvement.

It is not proper for the jury, when sent out to view the premises sought to be condemned, to go upon and view other tracts of land in the same locality; and the failure of a party to object to the jury inspecting other lands will not waive his objection.

Where no objection is raised in the trial of a condemnation suit, that the petitioner is seeking to condemn an unnecessary amount of land, the refusal of the Court to require the production of detailed plans and specifications of the proposed improvement is not assignable as error.

In estimating the value of land taken the jury cannot consider its capacity of being improved by diking the adjoining river, where the effect of such diking would be to overflow the land of others.

Chancery will not entertain a bill to specifically enforce contracts relating to personal property, nor contracts which, by their terms, call for a succession of acts, or which require protracted supervision and direction.

Under the practice of this state, objection to the equity of a bill may be made by answer.

The Sanitary District, being a municipal corporation, is not subject to garnishment.

Where the statute provides that contracts for work shall be let to the lowest responsible bidder, the determination as to whether a bidder is responsible is an exercise of official discretion which belongs to the Board of Trustees, and which, in the absence of fraud, the courts will not interfere with.

So held by Judge Tuley in the case of Ernest V. Johnson et al. vs. Sanitary District of Chicago, now pending on appeal in the Appellate Court.

Many opinions have been given upon matters referred to this Department by the Board or by the respective Committees.

In connection with the various suits and questions considered, twenty-eight (28) briefs have been prepared, exclusive of the briefs and arguments in appeal cases.

The following are classified statements showing the lands obtained by purchase or by condemnation during the year 1894 in the respective counties, the total outlay on Land Account, with recapitulations and summaries, and a statement of departmental expenses incurred during the year 1894;

LANDS ACQUIRED IN 1894.

COOK COUNTY.

Purchase, 102.31 acres.....	\$328,380 84	
Condemnation, 33.98 acres.....	66,448 32	
		\$394 829 16

Manchester Subdivision.

Purchase, 48 lots.....	\$31,175 00	
Condemnation, 18 lots.....	9,550 00	
		40,725 00

NOTE—Including \$2,175 paid for extinguishment of squatter's right in Manchester.

WILL COUNTY.

Purchase, 306.05 acres.....	\$38,416 25	
Condemnation, 88.00 acres.....	10 528 60	
		48,944 85

DU PAGE COUNTY.

Purchase, being additional to amount allowed by verdict of the jury rendered August 27th. 1892, in the case of Sanitary District of Chicago vs. John H. Tedens et al., which was appealed and new trial ordered.....		1,776 57
--	--	----------

TAX AND ABSTRACT ACCOUNT.

Cook County taxes.....	\$ 5,223 76	
Abstracts.....	15,435 00	
		20,658 76
Will County taxes.....	\$ 421 33	
Abstracts.....	662 80	
		1,084 13
Du Page County taxes.....		1 77
		\$508,020 24

NOTE—7.22 acres should be deducted from this, as noted in annual report for 1893, settlement for which was not made till January 15th, 1894, the consideration for which was.... \$11,552 00

There was also sundry credits from sale of machinery, power house, etc., amounting to.....	2,649 38	
		14,201 38

Making a net total for 1894 of.....

\$493 818 86

SUMMARY OF LANDS ACQUIRED BY PURCHASE AND CONDEMNATION TO DECEMBER 31st, 1894.

1892—	Acres.	Total acres.
Purchase.....	2,111.86	
Condemnation.....	1,486.07	
		3,597.93

1893—		
Purchase.....	1,647.96	
Condemnation.....	677.61	
		2 325.57

NOTE—Not including twenty six (26) lots in Manchester.

1894—		
Purchase.....	408.36	
Condemnation.....	121.98	
		530.34

NOTE—Not including sixty-six (66) lots in Manchester.

6,453.84

SUMMARY TO DATE.

	Acres.	Gross Amt.
Acquired in 1892.....	3,597.93	\$ 588 012 13
Acquired in 1893.....	2,225.57	1,293,357 76
(And twenty-six (26) lots in Manchester.)		
Acquired in 1894.....	530.34	508,020 24
	6,453.84	\$2,389,390 13

(And Sixty-six (66) lots in Manchester.)

Less twenty-one one-hundredths (21-100) acres condemned by
the Chicago, Madison & Northern R. R. Co..... .21

Total..... 6,453.63

NOTE—This includes \$11,522 reported in 1893. (See Annual Report, Note.)

Deduct this amount, together with other sundry credits amount-
ing to..... \$ 17,533 53

Net to date..... \$2,371,856 60

EXPENSES OF LAW DEPARTMENT FOR THE YEAR ENDING DECEMBER 31, 1894.

SALARIES.

Attorneys.....	\$16,575 57	
Office force.....	4,067 98	\$ 20,643 55

GENERAL EXPENSES.

Court costs.....	\$ 5,300 15	
Right of way.....	6,918 53	
Expense account.....	647 10	
Legal services.....	11,596 82	
Printing and stationery.....	358 60	
Sundries.....	38 05	24,859 25

LAND ACCOUNT.

Right of way, (for which deeds have passed).....	\$486,275 58	
Taxes, Cook County.....	5,223 76	
Taxes, Will County.....	421 33	
Taxes, Du Page County.....	1 77	
Abstracts, Cook County.....	15,435 00	
Abstracts, Will County.....	662 80	508,020 24
Gross total for 1894.....		\$553,523 04

From which deduct as follows :

From Land Account heretofore mentioned.....	\$11,552 00
Proceeds of sales of machinery, power house, etc.....	2,649 38

GENERAL ACCOUNT.

Emergency Fund, returned Nov. 14, 1894.....	1,560 00	
Cagwin witness fee and subscription to <i>Corporation and Law Journal</i>	15 00	
Returned Sept. 19, 1894, to credit of Vouchers 2486 and 3166.....	275 00	15,991 38
Net total for 1894.....		<u>\$537,531 66</u>

SUMMARY OF EXPENSES.

General Account, (net).....	\$ 43,712 80
Land Account, (net).....	493,818 86
Total net expenses.....	<u>\$537,531 66</u>

For the coming year, in addition to condemnation proceedings, the attention of the Department will be given to the trial of the miscellaneous suits which shall be reached on the various calendars, and to matters in connection with our contracts. The ordinary current expenses for 1895 are estimated at fifty thousand (\$50,000) dollars.

Respectfully submitted,

(Signed)

GEO. E. DAWSON, Attorney."

ANNUAL REPORT OF TREASURY DEPARTMENT FOR 1894.

The Clerk presented the annual report of the Treasury Department, (accompanied by three (3) tables and six (6) certificates), for the year ending December 31, 1894; and the report was read.

Mr. Eckhart, seconded by Mr. Kelly, moved that the report, with accompanying tables and certificates, be ordered printed and referred to the Committee on Finance.

The following is

THE ANNUAL REPORT, WITH ACCOMPANYING TABLES, ETC.:

"CHICAGO, January 16, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I herewith submit in ac-

cordance with the rules of your Honorable Body, the annual report of this Department for the year ending December 31, 1894.

The tabulated statement following shows the receipts and disbursements of your Treasurer's office during the year 1894, and a balance on hand, at the close, of one million three hundred and eighteen thousand five hundred and twenty dollars and nineteen cents (\$1,318,520.19).

Respectfully submitted,

(Signed) MELVILLE E. STONE,

Treasurer of the Sanitary District of Chicago."

(Enclosing three (3) tables and six (6) certificates.)

"SUMMARY.

Receipts and Disbursements—Sanitary District of Chicago, 1894.

RECEIPTS.

Balance on hand January 1, 1894.....	\$227,330 57
Bond Account (including premium and accrued interest)	\$5,084,778 38
Tax Account.....	1,145,607 21
Interest Account (Interest on monthly bank balances).....	47,127 86
General Account.....	4,976 00
Law Department.....	1,790 00
Law Department—Land Account.....	31,682 88
Engineering Department.....	364 00
Engineering Department—Construction account.....	80 041 60
Total	\$7,399,367 93
Grand total	<u>\$7,626,698 50</u>

DISBURSEMENTS.

Clerical Department.....	\$ 10,832 94
Treasury Department.....	2,053 40
Engineering Department.....	187,402 63
Engineering Department—Construction Account	4,853,392 94
Law Department.....	45,502 80
Law Department—Land Account.....	544,053 74
General Account.....	56,298 33
Police Department.....	51,141 53
Bonds and Interest matured.....	557,500 00
Total	\$6,308,178 31
Balance on hand December 31, 1894.....	<u>1,318,520 19</u>
Grand total	<u>\$7,626,698 50</u>

The balance of \$1,318,520.19 on hand December 31st, 1894, is distributed among six banks, and a certificate from each, certifying the amount on deposit in each bank at the close of the year, is hereto attached and made a part of this report.

Respectfully submitted,

(Signed)

MELVILLE E. STONE,

Treasurer."

RECEIPTS—SANTARY DISTRICT OF CHICAGO—JANUARY 1, 1894 TO DECEMBER 31, 1894.

MONTHS—1894.	BOND ACCOUNT.				Tax Account.	Interest Account.	General Account.	Law Dept.	Law Dept., Land Account.	Engineering Dept.	Engineering Dept., Construction Account.	Monthly Totals.
	Principal.	Premium.	Accrued Int.									
January.....	\$3,000,000 00	\$53,816 21	\$ 1,923 17	\$ 20,435 00	\$5,178 07	\$2,000 00	\$ 325 00	\$80,000 00	\$114,242 45			
February.....				37,082 31	3,680 98	150 00	1,082 74	41 00	26,115 98			
March.....				273,682 49	4,137 60	120 00			63,502 78			
April.....				50,000 00	3,397 64		641 84		277,340 09			
May.....				100,000 00	2,835 78	150 00	23,246 00		51,339 28			
June.....				150,000 00	2,848 82				135,231 78			
July.....				100,000 00	1,522 85		6,787 50		132,348 82			
August.....	3,000,000 00	17,121 00	11,918 00	100,000 00	5,385 80	270 00			137,349 35			
September.....				20,000 00	4,859 58				205,294 58			
October.....				97,437 41	3,164 32	1,250 00		\$ 275 00	103,942 70			
November.....						38 00		1,515 00	8,564 32			
December.....									\$304 00			
Totals.....	\$6,000,000 00	\$70,937 21	\$13,841 17	\$1,148,607 21	\$47,127 86	\$4,976 00	\$31,082 88	\$80,041 00	\$7,399,367 93			
Balance on hand December 31, 1893 as per Treasurer's last annual report									227,330 57			
Grand Total of Receipts.....									\$7,626,698 50			

(Certificates)

"CHICAGO, December 31, 1894.

To Melville E. Stone, Treasurer of the
Sanitary District of Chicago:

I hereby certify that the balance on deposit in the Fort Dearborn National Bank to the credit of the Sanitary District of Chicago, at the close of banking hours this day, December 31, 1894, is two hundred and fifty-one thousand one hundred and twenty-two and eight one-hundredths (\$251,122.08) dollars.

(Signed) JOHN A. KING, *Pt.*

"CHICAGO, December 31, 1894.

To Melville E. Stone, Treasurer of the
Sanitary District of Chicago:

I hereby certify that the balance on deposit in the Metropolitan National Bank to the credit of the Sanitary District of Chicago, at the close of banking hours this day, December 31, 1894, is two hundred and three thousand eight hundred and fifty-nine and ninety-five one-hundredths (\$203,859.95) dollars.

Metropolitan National Bank of Chicago.

(Signed) E. DICKINSON,
Asst. Cashier.

"CHICAGO, December 31, 1894.

To Melville E. Stone, Treasurer of the
Sanitary District of Chicago:

I hereby certify that the balance on deposit in the National Bank of Illinois to the credit of the Sanitary District of Chicago, at the close of banking hours this day, December 31, 1894, is two hundred and fifty-one thousand nine hundred and sixty-two and sixty-one one-hundredths (\$251,962.61) dollars.

(Signed) The Natl. Bank of Illinois.
HENRY D. FIELD,
Asst. Cashier.

"CHICAGO, December 31, 1894.

To Melville E. Stone, Treasurer of the
Sanitary District of Chicago:

I hereby certify that the balance on deposit in the Chicago National Bank to the credit of the Sanitary District of Chicago, at the close of banking hours this day, December 31, 1894, is two hundred and fifty

thousand six hundred and thirty-eight and eight one-hundredths (\$250,638.08) dollars.

The Chicago National Bank.
(Signed) By F. M. BLOUNT,
Cashier.

"CHICAGO, December 31, 1894.

To Melville E. Stone, Treasurer of the
Sanitary District of Chicago:

I hereby certify that the balance on deposit in the American Trust & Savings Bank to the credit of the Sanitary District of Chicago, at the close of banking hours this day, December 31, 1894, is twenty-one thousand and three and seventy-nine one-hundredths (\$21,003.79) dollars.

The American Trust & Savings Bank.
(Signed) By J. R. CHAPMAN,
Cashier.

"CHICAGO, December 31, 1894.

To Melville E. Stone, Treasurer of the
Sanitary District of Chicago:

I hereby certify that the balance on deposit in the Globe National Bank to the credit of the Sanitary District of Chicago, at the close of banking hours this day, December 31, 1894, is three hundred and thirty-nine thousand nine hundred and thirty-three and sixty-eight one-hundredths (\$339,933.68) dollars.

Globe Natl. Bank.
(Signed) By D. A. MOULTON,
2d V. Pt.

ANNUAL REPORT OF ENGINEERING DEPARTMENT FOR 1894.

The Clerk presented the annual report of the Engineering Department for the year ending December 31, 1894; and the report was read.

Mr. Cooley, seconded by Mr. Kelly, moved that the report be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously and the report was ordered printed and so referred.

The following is

THE REPORT:

"CHICAGO, Jan. 15th, 1895.

To the Honorable the Board of Trustees
of the Sanitary District of Chicago:

GENTLEMEN—The year 1894 has been

marked by gratifying progress in the work of constructing the Main Channel and auxiliary works of this District, and I herewith submit my report on the work of the Engineering and Construction Departments, which you have intrusted to my charge, covering the twelve months last past, during which period the value of the work done amounts to \$5,887,940.64, which added to the total amount earned up to January 1st, 1894, gives a total to the first day of the present year of \$3,438,254.33. This sum equals 44 43 per cent of the entire work now under contract, making the rating on a money basis. Making the rating on a yardage basis we find that 9,320,600 cubic yards of glacial drift and 3,637,680 cubic yards of solid rock have been removed within the year. The total yardage removed to January 1st, 1895, is 12,603,806 cubic yards of glacial drift, 5,358,968 cubic yards of solid rock, or 48.6 per cent nearly of the entire yardage of glacial drift, 43.57 per cent of the entire yardage of solid rock and 45 43 per cent nearly of the aggregate yardage of glacial drift and solid rock.

It must be borne in mind that since January 1st, 1894, nine sections have had to be equipped and an organization for working them perfected. Eight sections have changed hands by assignment or re-letting and one section was abandoned late in the season and was under advertisement for re-contract when the year closed, leaving eleven sections only on which work has been prosecuted vigorously throughout the year. The year 1895 opens with twenty-eight sections equipped and organized, and we may safely predict a rate of progress far exceeding the achievements of the past year, which have been phenomenal in the history of construction.

As the status of the work actually under contract is first in importance, I have taken up the condition of each section consecutively, commencing at Robey street, and given a concise history of each, making reference to each order or act relating thereto, emanating from your Honorable Board, or your authorized representatives, as set forth in the Proceedings for the year last past. Passing on from the sections under contract, the work required to be done before the Channel can be made available is discussed in connection with the plans therefor. The work of the Engineering

Department for the year last past is presented, and the condition of the Department considered.

Exhibits forming a part of this report are the following:

First—The letter of Mr. William Trinkaus, Record Clerk, transmitting to me two statements in tabular form. Table No. 1 shows the expenditures of the Engineering Department for 1894 for each month, distributed to the proper accounts. Table No. 2 shows the disbursements, from the inception of the work to December 31st, 1893, the disbursements for 1894 and the totals to December 31st, 1894, distributed to the proper accounts.

Second—A tabular statement covering the work now under contract, based upon the revised estimates of the Assistant Engineers, showing section by section the total estimated cost of the Main Channel and collateral work now under contract; the amount of work done to December 31st; the amount of reserved percentage and the balance required to complete.

Third—A table showing upon a yardage basis the amount of work to be done December 31st, 1894, under each classification, the amount of work done to December 31st, 1893, and the difference or net progress for 1894.

Fourth—A revised estimate of the entire work under contract, or in contemplation, from Robey street through the City of Joliet.

Section O—Bids were opened for this section on April 13th, 1894 (page 1867), and on May 21, the Committee on Engineering and Finance reported in favor of awarding the contract to McMahon and Montgomery Company (page 1912), and on May 16th the contract was finally executed by McMahon and Montgomery Company, et al. (page 1950). October 2d the Chief Engineer gave permission, under limiting conditions, to Howard H. Gross & Co. to remove top soil from Main Channel (see Chief Engineer's Letter Book, page 149). This permission extended to Section N. September 25th (page 2233), the Joint Committee on Engineering and Finance reported purchase of land needed for right-of-way for Auxiliary Channel, the construction of which was provided for in the contract. On October 3d the Chief Engineer reported having ordered the locat-

ing of the Auxiliary Channel across the said tract of land (page 2241). The revised estimates for this section are as follows:

<i>Cu. Yds.</i>		
Main Channel.....	1,504,734 at 21c...	\$315,994 14
Auxiliary Channel. 132,069 at 19.9c..		26,269 79
Surface ditches....	12,000 at 21c...	2,520 00
Total.....	1,648,733	\$344,783 93
Amount earned to Jan. 1st, 1895,...		110,464 81
Unfinished work.....		\$234,319 12
Reserved percentage.....		15,024 56
Balance required to complete..		<u>\$249,343 68</u>

Proportion of work completed 32.04 per cent, nearly.

Section N—Bids were opened April 18th, 1894 (page 1837), and on May 2d the Committee on Engineering and Finance reported in favor of awarding the contract to Hayes Bros. (page 1913), and on May 16th the contract was finally executed with Hayes Bros. et al. (page 1950). October 2d permission was given to Howard H. Gross & Co. by the Chief Engineer to remove top soil from the Main Channel under certain limitations (see Chief Engineer's Letter Book, page 149).

The revised estimates for this section are as follows:

<i>Cu. Yds.</i>		
Main Channel.....	1,105,443, at 23c...	\$254,251 89
Surface ditches.....	8,400, at 23c...	1,932 00
Total.....	1,113,843	\$256,183 89
Amount earned to Jan. 1, 1895.....		16,399 00
Unfinished work.....		\$239,784 89
Reserved percentage.....		3,484 79
Balance required to complete.....		<u>\$243,269 68</u>

Proportion of work completed, 6.43 per cent, nearly.

All material not needed for leveling up the surface of the adjacent lands, or for levees, street and railroad approaches, is to be removed from Sections N and O, so that the right of way may be unincumbered and ready for any use to which it may be for the good of the District to devote it.

Section M—The contract for this section was awarded to the Heidenreich Co., December 23d, 1893 (page 1641), and is dated December 27th, 1893. The first estimate returned on this section is dated April 1st, October 17th (page 2160), permission was given to waste material from the Main Channel on a small tract of land outside of

the 800 foot right of way on the east end of the section, said tract being a part of the lands purchased by the District of W. C. D. Grannis.

The revised estimates for this section are as follows:

<i>Cu. Yds.</i>		
Main Channel.....	717,650 at 21.7c..	\$155,730 05
Surface ditches....	5,200 at 21.7c..	1,128 40
Total cost	722,850	\$156,858 45
Amount earned to Jan. 1st, 1895....		74,604 60
Unfinished work.....		\$ 82,253 85
Reserved percentage.....		13,480 04
Balance required to complete...		<u>\$ 95,733 89</u>

Proportion of work completed, 47.55 per cent, nearly.

Section L—The contract for this section was awarded to the Heidenreich Co., December 23d, 1893 (see page 1641), and is dated December 27th, 1893. The first estimate returned on this section is dated April 1st, 1894.

The revised estimates for this section are as follows:

<i>Cu. Yds.</i>		
Main Channel.....	1,094,081 at 19.7c	\$215,533 96
Surface ditches.....	7,800 at 19.7c	1,536 60
Totals.....	1,101,881	\$217,070 56
Amount earned to Jan. 1st, 1895....		90,245 70
Unfinished work.....		\$126,824 86
Reserved percentage.....		16,398 53
Balance required to complete.....		<u>\$143,223 39</u>

Proportion of work completed 41.57 per cent, nearly.

Section K—The contract for this section was awarded to Christie & Lowe, December 23, 1893 (page 1641), and the contract is dated December 27, 1893. The first estimate returned on this section is dated April 16, 1894.

The revised estimates on this section are as follows:

<i>Cu. Yds.</i>		
Main Channel.....	1,147,757 at 25c...	\$286,939 25
Surface ditches....	8,200 at 25c...	2,050 00
Totals.....	1,155,957	\$288,989 25
Amount earned to Jan. 1st, 1895....		103,650 00
Unfinished work.....		\$185,339 25
Reserved percentage.....		17,291 88
Balance required to complete..		<u>\$202,631 13</u>

Proportion of work completed 35.9 per cent, nearly.

Section I—The contract for this section was awarded to Christie & Lowe, December 23, 1893 (page 1641), and the contract is dated December 27, 1893. The first estimate returned is dated February 1, 1894.

The revised estimates on this section are as follows:

<i>Cu. Yds.</i>		
Main Channel.....	1,131,649 at 25c...	\$282,912 25
Surface ditches....	8,200 at 25c...	2,050 00
Totals.....	1,139,849	\$284,962 25
Total earned to Jan. 1st, 1895.....		170,100 00
Unfinished work.....		\$114,862 25
Reserved percentage.....		22,970 94
Balance required to complete...		<u>\$137,833 19</u>

Proportion of work completed, 59.7 per cent, nearly.

Section H—The contract for this section was awarded to Gahan & Byrne December 23d, 1893, (page 1641) and is dated December 27th, 1893. The first estimate was returned July 16th, 1894.

The contractors for this section erected a monster apparatus for excavating, designed by Hoover & Mason. It consisted of a bridge spanning the Channel with cantilever arms projecting over the spoil area. At the extremities of the cantilevers were located large drums over which a steel belt, composed of a series of steel pans, linked together, mounted on trunions and traveling on a track between the trusses, was caused to pass. The sag of this belt went to the bottom of the Channel and the material was loaded on by a gang of plows, moved back and forth by steam power. The length from tip to tip of the cantilever was 640 feet and the height from which the material was dumped was about 90 feet. The cost of this machine was about \$32,000. By an unfortunate accident it was wrecked on November 8th, at 4:20 P. M., but it is now being rebuilt. The first estimate on this section is dated July 16, 1894.

The revised estimates for this section are as follows:

Glacial drift, 1,077,032 cu. yds. at 29c.	\$312,339 28
Amount earned to Jan. 1st, 1895....	41,018 76
Unfinished work.....	\$271,320 52
Reserved percentage.....	8,716 39
Balance required to complete..	<u>\$280,036 91</u>

Proportion of work completed, 13.13 per cent, nearly.

Section G—This section was awarded to Gahan & Byrne December 23, 1893, (page 1641) and the contract is dated December 27, 1893. The first estimate is dated April 1st, 1894.

The revised estimates of this section are as follows:

Glacial drift, 1,364,075 cu. yds. at 28c	\$381,941 00
Amount earned to Jan. 1st, 1895.....	147,813 38
Unfinished work.....	\$234,127 32
Reserved percentage.....	30,210 01
Balance required to complete...	<u>\$264,337 33</u>

Proportion of work completed, 38.7 per cent, nearly.

Section F—This section, in the hands of Ricker, Lee & Co., had to its credit January 1st, 1894, \$90,023.90, which was \$20,-876.42 in excess of the progress requirements of that date. On January 10th, the Joint Committee on Engineering and Finance reported to the Board the contract under which the endings of this section were changed (page 1670). This contract was executed November 1st, 1893. On April 3d, 1894, Ricker, Lee & Co. called the attention of the District to hard material found upon the section (page 1854). Acting under advice from the Committee on Engineering and Finance, the Chief Engineer caused test pits to be sunken upon this section, to determine the character of the material complained of and the extent of it. The proceedings show the successive developments of this controversy, on pages 2030, 2056-7, 2067, 2076, 2078-81, 2084-85, 2086 and 2038. Failing of any help or relief at the hands of your Honorable Board, these contractors prosecuted their work until the early part of November. Their mid-monthly estimate for that month showed an output of 1,147 cubic yards. On November 28th (page 2325), the Chief Engineer and Attorney reported the section to you as being delinquent. On December 5th (page 2341), you ordered the contractors to resume work within ten days. On December 19th (page 2366), the Chief Engineer reported failure to comply with your order, and you then passed an order for the re-advertisement of the section; bids to be returned January 9th, 1895. Ricker, Lee & Co. have excavated under their contract 504,293 cubic yards of glacial drift from the Main Channel, and 153,234 cubic yards from the River Diversion, or a

total of 662,527 cubic yards, at 23¼ cents, \$157,350.16. Of this amount, the reserve of 12½ per cent, amounting to \$19,668.77, remains in possession of the District.

The revised estimates for this section are as follows:

<i>Cu. Yds.</i>	
Glacial drift, 1,251,887 at 23¼c.....	\$297,323 16
Solid rock.... 16,724 at 80c.....	13,379 20
Spillway concrete dam (see vouchers).....	20,518 41
Spillway levees (see vouchers).....	11,653 09
Raising Santa Fe bridge, etc. (see vouchers).....	5,875 05
	<u>\$348,749 51</u>
Total value of work done to Jan. 1st, 1895.....	195,397 31
Unfinished work.....	\$153,352 20
Reserved percentage.....	19,668 77
Balance required to complete..	<u>\$173,020 97</u>

Proportion of work completed, 56.03 per cent, nearly.

Section E—This section, in the hands of Streeter & Kenefick, had to its credit January 1st, 1894, \$150,012.77, which was \$56,786.45 in excess of the required output at that date. On January 10th the Joint Committee on Engineering and Finance reported to the Board the contract under which the endings of the section were changed (page 1670). This contract was executed November 1st, 1893. On March 6th (page 1817), the section was flooded. The insufficient levees were unable to resist the prevailing high water of the Desplaines. Besides the flooding of the section, a crevasse occurred in the Illinois and Michigan Canal levee, and serious damage resulted therefrom (see pages 1830 and 1839). The resulting cost which has been charged up to these contractors is \$5,115.22.

The contractors for this section made claims for extra compensation, as did their neighbors on "F." Test pits were sunken on this section, as was done on F, and at the same time the results were reported to the Committee on Engineering and Finance with the conclusions reached by the Chief Engineer, Superintendent of Construction, First Assistant Chief Engineer and the Assistant Engineers on the Brighton, Summit and Willow Springs Divisions who acted as Committee of Investigation, together with the Assistant Superintendent of Construction, who made no report of his conclusions (see pages 1842, 2030, 2056-7, 2067,

2076, 2081, 2084, 2085), which gave all of the matters of record in this connection. On August 8th (page 2086), you passed an order requiring Streeter & Kenefick to resume work within ten days. On the same day these said contractors presented a communication to you, making suggestions for an adjustment (page 2088), which were not entertained. A feint of resumption was made (page 2116), and a formal notice was sent in by the contractors that they had resumed (page 2017). On August 28th (page 2132) I advised you in writing that the resumption was not bona fide, and recommended that the work be re-advertised under Clause "L" of the contract (failure to complete). On the 29th (page 2172) you ordered the re-advertisement to be issued, as recommended, bids returnable September 12th, 1894. Bids were opened on September 12th (page 2196), and on the 19th (page 2306) the contract was awarded to Angus & Gindele, whose bid was the lowest of all received, and was also ½ cent lower on glacial drift and 30 cents lower on solid rock than Streeter & Kenefick's prices. September 29th (page 2248) Streeter & Kenefick addressed a letter to you acquiescing in the disposition made of the section.

The revised estimates for this section are as follows:

Glacial drift, 1,909,377 cu. yds., at 27¼c.....	\$525,078 68
Solid rock, 78,765 cu. yds., at \$1.00...	78,765 00
Overhaul 9,641 cu. yds., at 26.755c...	2,579 45
Crushed stone for road.....	190 01
	<u>\$606,613 14</u>
Amount earned Jan. 1st, 1895.....	171,400 87
	<u>\$435,212 27</u>
Reserved percentage.....	21,968 09
	<u>\$457,180 36</u>
Less amount of flood damage paid by Sanitary District and charged to Streeter & Kenefick.....	5,115 72
Balance required to complete..	<u>\$452,064 64</u>

Proportion of work completed 25.28 per cent, nearly.

Note—This statement is figured at Streeter & Kenefick's prices, which represents the cost to the District.

Section D—E. D. Smith & Co., contractors. This section was in arrears December 31st, 1893, \$31,622.13. On January 10th the Committee on Engineering and

Finance reported to the Board the contract under which this section was extended eastward to terminate at the westerly line of the Calumet Terminal right of way (pages 1669-72).

On January 24th the Chief Engineer (pages 1718-19) recommended the suspension of Clause "J" on this section, and you passed an order authorizing the suspension of said clause. The work on this section has been pushed with vigor under good management and the results have been most gratifying. On December 31st the deficit of \$31,622.13 would have been absorbed and the section would have had to its credit on advance progress \$14,357.19, but in the latter part of November rock was encountered on this section. The volume of this rock from the best indications available will be about 137,694 cubic yards. This amount figured at \$1 per cubic yard changes and increases the estimate on the section, and hence the rating is so changed as to show it in arrears on progress account \$50,344.29.

The total earned in 1894 was \$235,440.48.

On February 14th (page 1759) an allowance of \$1,000 was made these contractors to cover cost of trestle which the extension of Section E eastward made it necessary for them to erect.

April 3rd (page 2053) these contractors made a claim for hard material found on their section, which was finally rejected by you August 1st, (pages 2076-78). On August 14th they addressed a letter to you protesting against your conclusions (page 2168).

I regret having to report the large development of solid rock on this section which was not anticipated when the contract was let and for which no price was fixed. One dollar is assumed as proper in the following estimate:

The revised estimates on this section are as follows:

Glacial drift, 1,877,721 cu. yds. at 26.437	\$496,422 48
Solid rock, 137,694 cu. yds. at \$1.00.	137,694.00
Raising Calumet Terminal bridge (see vouchers).....	1,380 54
Trestle, 390 feet.....	1,000 00
Total estimated cost.....	\$636,997 02
Amount earned to Jan. 1st, 1895.....	298,568 52
Unfinished work.....	\$338,628 50
Reserved percentage.....	36,942 18
Balance required to complete..	\$375,570 68

Proportion of work completed, 46 84 per cent, nearly.

Section C—The Western Dredging Company, contractors for this section, have made fairly good progress, although now delinquent to the extent of \$39,974.64. These contractors had the benefit of the suspension of Clause J, recommended by the Chief Engineer, February 20th, and authorized by you on the next day (page 1785). On February 21st you authorized a revision of the contract for this section, as recommended by the Chief Engineer, on lines which would admit of using hydraulic dredges in the muck portions and a proper revetment of the banks with hard material. Provision was also made for saving building sand at an additional cost of 12½ cents per cubic yard (see pages 1786-7). These contractors made claim for hard material April 3d (pages 1854-5), which was refused by you August 1st (pages 2076-8).

On June 27th you approved the payment of a bill rendered by these contractors for work done on the levee of the Illinois and Michigan Canal on the recommendation of the Chief Engineer (page 2023). Amount of bill, \$579.08, \$167.49 of which had been previously paid.

The hydraulic dredge built and operated upon this section failed to meet the expectations of its designers. They eroded the material with water jets successfully enough, but failed to suck up the material so eroded in paying quantities.

On the night of September 10th, a cross levee built by Heldmaier & Neu, about 3 000 feet west of the east end of Section B, to enable them to unwater the east part of said section, gave way and flooding the partially unwatered part of Section B, swept over Section C, submerging the tracks and steam shovels completely. This caused a suspension of steam-shovel work for about 15 days while the section was being pumped out and damages repaired.

The revised estimates on this section are as follows:

Glacial drift, 2,063,653 cu yds at 23½c	\$484,958 46
Sand included in glacial drift, extra price paid, 6,253 cu. yds. at 12½c...	781 63
Force account, I & M. Canal... ..	579 08
Total cost.....	\$486,319 17
Amount earned to Jan. 1st, 1895.....	225,908 85
Unfinished work.....	\$260,410 32
Reserved percentage.....	28,068 52
Balance required to complete...	\$288,478 84

Proportion of work done, 46.45 per cent, nearly.

Section B—Heldmaier & Neu, contractors. The specifications under which this section (also Section A) were let did not meet the conditions which obtained throughout the entire length of the section, and a revision, by mutual agreement of the parties to the contract, was seen to be necessary. Such a revision was agreed to February 10th (see pages 1734-40). These contractors had entered into arrangements with Lindon W. Bates for two hydraulic dredges. One of these was taken down the Illinois and Michigan Canal, escorted by a dipper dredge which cut a Channel from said Canal into the Sanitary District Channel, through which the hydraulic dredge was passed to the scene of its future operations. The other dredge was built upon the work. The performances of these dredges has been phenomenal. The two have excavated from our Channel and from the Desplaines River, 1,538,387 cubic yards in 882½ working days, or an average of 1,731.9 cubic yards per day each.

On May 16th (page 1946) you passed an order authorizing additional expenditure in making the Illinois and Michigan Canal safe against floods. The easterly 3,000 feet of this section has been separated by a cross levee from the rest of the section, unwatered, and is now being excavated by dry methods. This cross levee broke on the night of September 11, causing the contractors much damage and delaying the work two weeks or more.

The revised estimates for this work are as follows:

Glacial drift, 1,789,038 cu. yds. at 27c.	\$483,040 26
Levee revetment, 2,000 cu. yds. at 20c	400 00
Work on Illinois and Michigan levee, force account.....	1,680 12
Total.....	\$485,120 38
Amount earned to Jan. 1st, 1895...	220,319 93
Unfinished work	\$264,800 45
Reserved percentage.....	41,493 57
Balance required to complete..	\$306,234 02

Proportion of work done, 45.42 per cent, nearly.

Section A—This section is also in the hands of Heldmaier & Neu, and is being constructed under the same specifications as Section B (pages 1734-40). At the time this revision was made, the westerly 700

feet of the section was surrendered and became thereafter a part of Section 1. This change relieved the contractors for A of all retaining wall, that construction being confined to the 700 feet surrendered. No material being available for building the levee dividing the Main Channel from the Desplaines River a pile trestle about 4,400 feet long was built on the line of this levee toward the close of 1893 by the Heidenreich Company at a cost of \$8,775 53, from which to dump material brought in by train. The contractors for this section have built about 1,600 feet of this levee and the contractors for Section 1 have nearly completed the remaining 2,800 feet. The displacement of muck by the hard material of which the levee is built, was so great as to practically close the old Channel of the Desplaines, a condition so serious that you entered into a contract with Lindon W. Bates to take his hydraulic dredge into the old Channel and remove the muck which had been forced into it. His contract price for this was 15 cents per cubic yard (see pages 2234-36). The total amount removed under this contract was 122,342 cubic yards at a cost of \$18,351.30. The work upon the Illinois and Michigan Levee which appears in the estimate was authorized by you May 16th (page 1946).

The revised estimate for this section is as follows:

Glacial drift, 2,726,021 cu. yds. at 30½c.....	\$834,843 94
Solid rock, 4,188 cu. yds. at 80c.....	3,350 40
Levee, borrowed, 86,000 cu. yds. at 36c.....	30,960 00
Levee, overhaul on, 50,000 cu. yds. at 20c.....	10,000 00
Levee revetment, 6,000 cu. yds. at 15c	900 00
Trestle work, 4,400 feet.....	8,597 35
Flood damages.....	847 40
I. & M. Canal levees strengthened..	5,888 63
Muck removed from old river, 122,342 cu. yds. at 15c.....	18,351 30
Total cost.....	\$913,739 02
Amount earned to Jan. 1st, 1895..	378,450 32
Unfinished work.....	\$535,288 70
Reserved percentage.....	64,316 85
Balance required to complete..	\$599,605 55

Proportion of work completed, 41.42 per cent, nearly.

Section 1—Griffiths & McDermott, contractors. This section was in the hands of Alfred Harlev when the year opened. On February 6th the Chief Engineer ad

ressed a letter to your Honorable Body, calling attention to the hopeless condition of the work, and recommending that it be re-advertised (page 1726). On February 10th the Joint Committee on Engineering and Finance presented a report with resolutions declaring this section forfeited, which resolutions were adopted by you (pages 1733-4) on the same day you adopted the report of the Chief Engineer, dated February 6th, together with the advertisement and specifications submitted by him (pages 1740-55). On February 16th the Chief Engineer submitted a revised form of advertisement, framed to cover Sections 1, N and O, which was adopted by you and substituted for the first form submitted (pages 1765-67). Bids were opened April 18th (page 1867). April 20th the Chief Engineer submitted a tabulated statement covering all bids received. This exhibit showed the lowest bid to have been made by Johnson & Bradley Co. On May 23d the report of the Joint Committee on Engineering and Finance, recommending that this section be let to Griffiths & McDermott, was adopted (page 1962-64).

The prices bid by Griffiths & McDermott were:

Glacial drift.....	\$0.42.9
Solid rock.....	.80
Retaining wall.....	2.90
Slope wall.....	.60
Overhaul.....	.20

On May 29th the President was served with a notice of a preliminary injunction, restraining the Board from rejecting the proposition submitted by the Johnson & Bradley Co., and from executing the contract with Griffiths & McDermott (page 1975). On June 6th the Attorney of the Board advised you of the dissolution of this injunction (page 1980). On the same day you adopted the recommendation of the Finance Committee, and ordered the contract to be consummated (page 1983).

The revised estimates for this section are as follows:

Glacial drift, 115,416 cu. yds. at 27c. \$	31,162 32
Glacial drift, 11,926 cu. yds. at 30% c.	3,652 34
Glacial drift, 158,617 cu. yds. at 86 5323c.....	137,254 90
Glacial drift, 10,162.....	4,772 45
I. & M. levee, force account.....	673 50
Willow Springs road, force acct.....	2,498 08
Protection levee, force account..	612 12
Protection levee, material acct...	10 50
Cross levee, building and removing	300 00

Repair, Columbia Park buildings.	30 00
Glacial drift, 1,052,285 cu. yds. at 42.9c.....	\$ 451,430 27
Solid rock, 536,024 cu. yds. at 80c..	428,819 20
Retaining wall, 66,967 cu. yds. at \$2.90.....	194,204 30
Slope paving, 1,285 cu. yds. at 60c.	771 00
Overhaul, 150,000 cu. yds. at 20c...	30,000 00

Total cost.....	\$1,286,190 98
Amount earned to Jan. 1st, 1895.	334,715 51
Unfinished work.....	\$951,475 47
Reserved percentage.....	36,723 56
Balance required to complete.	\$988,199 03

Proportion of work completed, 28 02 per cent, nearly.

Section 2—McArthur Brothers, contractors, were delinquent January 1st, 1894, \$22,080.50, and this delinquency has increased during the year \$148,633, so that the total delinquency January 1st, 1895, is \$170,713 50. Nevertheless this section is well equipped and well handled and the delinquency, which reached its maximum in June, is being steadily reduced.

The revised estimates for this section are as follows: No price has been agreed to for retaining walls, the price used herein is assumed.

Glacial drift, 59,191 cu. yds. at 28c..	\$ 16,573 48
Glacial drift, 89,718 cu. yds. at 61.3095c.....	55,005 68
Glacial drift, 700,314 cu. yds. at 50.103c.	350,157 00
Solid rock, 472,624 cu. yds. at 80c....	378,099 20
Retaining wall, 37,663 cu. yds. at \$3.25.	122,421 00

Total.....	\$922,256 36
Amount earned to Jan. 1st, 1895..	370,798 76
Unfinished work.....	\$551,457 60
Reserved percentage.....	43,276 66
Balance required to complete..	\$594,734 26

Proportion of work completed, 40.2 per cent, nearly.

Note—This work was done on force account, and the price per cubic yard shown above is simply the total cost divided by the total number of yards moved.

Section 3—Gilman & Co., contractors. This section was formally relinquished by McArthur Bros., January 3d (page 1659). Gilman & Co. furnished additional bonds, January 10th, as per report of the Committee on Finance (page 1869). These contractors were delinquent January 1st, 1894, \$44,505.30, and January 1st, 1895, their delinquency is \$71,374 90. The maximum

delinquency, as shown by the report August 1st, was \$107,190. Since then it has been steadily reduced. The equipment is ample, and the management good. On August 28th (page 2133) a contract was executed by Gilman & Co., substituting cement masonry for dry retaining walls, and the price fixed at \$3.25 per cubic yard.

The revised estimates for this section are as follows:

Glacial drift, 73,310 cu. yds. at 27c...	\$ 19,793 70
Glacial drift, 344,314 cu. yds. at 56c..	192,815 84
Solid rock, 764,358 cu. yds. at 76c....	580,912 08
Retaining wall, 13,307 cu. yds. at \$3.25.....	43,247 75
Total cost.....	\$836,769 37
Amount earned to Jan. 1st, 1895..	327,728 90
Unfinished work.....	\$509,040 47
Retained percentage.....	46,732 82
Balance required to complete..	\$555,773 29

Proportion of work completed, 39.2 per cent, nearly.

Section 4—McArthur Bros., contractors, were delinquent January 1st, 1894, and their delinquency increased to \$227,371.03, or nearly 8 months behind progress requirements.

The revised estimates for this section are as follows:

Glacial Drift, 48,593 cu. yds. at 27c..\$	13,120 11
Glacial Drift, 951,062 cu. yds. at 49c..	466,020 38
Solid Rock, 341,030 cu. yds. at 80c....	272,816 00
Retaining Wall, 48,564 cu. yds. at \$3.25.....	190,333 00
Glacial Drift, 106,803	done on force account
Solid Rock, 17,857	
account.....	79,910 23
Total cost.....	\$1,022,199 72
Amount earned to Jan. 1st, 1895..	404,123 28
Unfinished work.....	\$ 618,076 44
Reserved percentage..	52,195 54
Balance required to complete..	\$ 670,271 98

Proportion of work completed, 39.53 per cent, nearly.

Note—The price used for retaining walls is assumed, no price for cement walls having been agreed to.

Section 5—This section was assigned by Agnew & Co. to the Qualey Construction Company January 17th (page 1702-4). The assignee had been in charge of this section as sub contractors prior to the assignment. On March 1st a serious land slide occurred from the right bank of the chan-

nel, between Stations 985 and 988. The facts in relation to this catastrophe were communicated to your Honorable Body on March 13 (see page 1814) and certain recommendations presented to you were reduced to form and became a supplemental contract April 4th (pages 1850-3). The volume of this land slide was 3,425 cubic yards. This supplemental contract prohibited spoiling on the south or left side of the channel. On May 2d you passed an order permitting a limited amount of spoil on the south side (page 1908).

The first retaining wall built on the channel was built on this section.

On December 12th you passed an order permitting rock to be wasted within the area which had been exempted by the supplemental contract (see page 2346). This permission was given to enable the contractor to use a cable way for removing rock.

The delinquency on this section January 1st, 1894 was \$92,776; January 1st, 1895, it is \$250,984.99, or ten months behind, nearly.

The revised estimates on this section are as follows:

Glacial drift, 1,064,021 cu. yds. at 27c..	\$287,285 67
Land slide, 16,671 cu. yds. at 27c.....	4,501 17
Overhaul, 814,678 cu. yds. at 4c.....	32,587 12
Solid rock, 265,833 cu. yds. at 73½c..	195,387 25
Retaining wall, 73,424 cu. yds. at \$3.25.....	238,628 00
Force account on River Diversion..	6,246 54
Rip-rap on levee.....	1,110 90
Total cost.....	\$765,746 66
Amount earned to Jan. 1st, 1895...	192,219 21
Unfinished work.....	\$573,527 45
Reserved percentage.....	29,634 50
Balance required to complete..	\$603,161 95

Proportion of work completed, 25.1 per cent, nearly.

Section 6—This section on January 1st was in the hands of Agnew & Co., although notice of intention to forfeit same by your Honorable Board had been served upon them on December 28th, 1893 (see pages 1760-1). On February 14th you granted an extension of 60 days before forfeiture, subject to conditions named in the stipulations of the date last named (page 1761). On March 17th you passed an order declaring this section forfeited (pages 1818-19). On April 20th (pages 1881-2) you rescinded the order of March 17th, and permitted

Agnew & Co. to assign this section to Mason, Hoge & Co. (pages 1882-90).

At the time of this assignment the section was about \$150,000 in arrears of the required progress. January 1st, 1895, this arrearage had been reduced to \$87,600 54. At the time the order of forfeiture was passed (March 17th) there was working upon this section a hydraulic dredge belonging to Chas. Vivian & Co. On March 21st the Chief Engineer recommended that this dredge be continued in the service of the District under a special arrangement with the owners of the dredge. Acting upon this recommendation, you authorized the Chief Engineer to arrange for carrying on this work, pending the re-letting of the section at a cost not exceeding 22 cents per cubic yard; and he entered into a contract with the said Charles Vivian & Co. at the price named, viz., 22 cents. This contract being still in force when the section was assigned to Mason, Hoge & Co., by mutual agreement between the parties it was assumed by the said Mason, Hoge & Co., who were accepted by Chas. Vivian & Co. instead of the Sanitary District.

The River Diversion levee along this section was largely made of vegetable matter excavated from the Diversion Channel, which, under the processes of nature, settlement and decay, reduced the levee to such an extent that a reinforcement was necessary. On a representation of the facts to you, you passed an order, October 10th, instructing the Chief Engineer to take the necessary steps for strengthening and protecting the work, limiting the volume of hard material to 15,000 cubic yards and the price to 25 cents per cubic yard (page 2254). Under this order the Chief Engineer arranged with Mason, Hoge & Co. to place hard material on the levee at the price designated.

The revised estimates on this section are as follows:

Glacial drift, 782,571 cu. yds. at 27c...	\$211,294 17
Glacial drift, 24,100 cu. yds. at 22c.....	5,302 00
Revetment of muck sides, 29,992 cu. yds. at 65c.....	19,494 80
Rip rap on levee, 5,469 cu. yds. at 63c.	8,445 47
Hard material on levee, 11,000 cu. yds. at 25c.....	2,750 00
Retaining walls, 33,736 cu. yds. at \$3.25.....	109,642 00
Solid rock, 549,118 cu. yds. at 73½c....	403,601 73
Total cost.....	\$753,530 17

Amount earned to Jan. 1st, 1895....	\$21,362 50
Unfinished work.....	\$534,167 67
Reserved percentage.....	28,474 06
Balance required to complete....	\$562,641 73

Proportion of work completed 29.3 per cent, nearly.

Section 7—This section was one of the Agnew group, and was in the hands of that firm January 1st, although notice had been issued under the order of your Honorable Board, December 27th, 1893 (page 1652), of your intention to forfeit same. On February 14th you granted an extension of 60 days, subject to the conditions named in the stipulations of that date. On March 21st, upon receipt of a letter from the Chief Engineer setting forth the condition of the work upon this section and the failure of the contractors to make the required rate of progress, you passed an order on the Clerk to serve upon Agnew & Co. notice of your intention to forfeit their contract for this section (pages 1827-29). On April 20th you rescinded your order of forfeiture and permitted Agnew & Co. to assign this section to Mason, Hoge & Co. (pages 1881-2, 1887-90). At that time the work upon this section was \$135,000 in arrears on progress account, and January 1st, 1895, it was but \$5,416.36 behind, showing \$170,014.50 earned in eight months and ten days from the date of the assignment.

The order for hard material on levee (page 2254) applied to both Sections 6 and 7, and the amount of material specified was the total for both sections.

The stipulations under which this contract was assigned (page 1888) provided for saving dimension stone, if such should be found upon the section, at your option. The extra price paid therefor being fixed at \$1 per cubic yard. On May 16th the Chief Engineer recommended that you exercise this option (page 1947), and on May 23d you passed an order instructing the Chief Engineer to have the stone saved as provided in the stipulations.

The revised estimates for this section are as follows:

Glacial drift, 283,963 cu. yds. at 26c....	\$ 73,830 38
Glacial drift, 4,000 cu. yds. at 25c.....	1,000 00
Solid rock, 931,307 cu. yds. at 73½c....	684,510 65
Rip-rap on levee, 4,390 cu. yds. at 63c.	2,765 70
Earth core in levee.....	2,000 00

Revetment of muck sides, 4,529 cu. yds. at 65c.....	\$ 2,943 85
Quarrying dimension stone, 34,646 cu. yds. at \$1.....	34,646 00
Retaining walls, 7,935 cu. yds. at \$3.25	25,788 75
Total cost.....	\$827,485 33
Amount earned to Jan. 1st, 1895....	376,974 00
Unfinished work.....	\$450,511 33
Reserved percentage.....	45,892 25
Balance required to complete....	\$496,408 58

Proportion of work completed 45.55 per cent, nearly.

Section 8—This section was also one of the Agnew & Co. group. On January 17th the original contractors assigned their contract for this section to Mason, Hoge, King & Co. On May 16th, upon the recommendation of the Chief Engineer, you authorized the suspension of Clause J upon this section (pages 1946-7). At the time this assignment was made you had not adopted cement walls for the Main Channel, hence when you finally adopted this class of masonry there were several sections upon which a price had to be made and agreed to. No agreement with Mason, Hoge, King & Co. was reached until December. On the 12th of that month the Chief Engineer and Attorney transmitted to you a contract with them, fixing the price at \$3.25 (pages 2346 7). On May 29th the Chief Engineer recommended and you authorized saving building stone found on this section (page 1972). The contract for this work was transmitted October 24 (page 2276). At the time this assignment was made progress on the section was \$170,486.76 in arrears; January 1st, 1895, it was \$36,566.00 behind progress, showing \$463,514.31 earned in eleven and a half months from the assignment.

The revised estimates for this section are as follows:

Glacial drift, 101,443 cu. yds. at 26c....	\$ 26,375 18
Solid rock, 1,262,749 cu. yds. at 74 $\frac{3}{4}$ c..	943,904 88
Retaining wall, 3,957 cu. yds. at \$3.25	12,860 25
Adjustment of Agnew claims.....	2,000 00
Cost of Stephens street bridge and roadway, Santa Fe trestle, track and fence.....	41,590 41
Dimension stone, 1,400 cu. yds. at \$1.00.....	1,400 00
Total cost.....	\$1,028,130 72
Amount earned to Jan. 1st, 1895....	607,863 16
Unfinished work.....	\$ 420,267 56
Reserved percentage.....	70,263 72
Balance required to complete....	\$ 490,631 28

Proportion of work completed, 59.12 per cent, nearly.

Section 9—This is the last of the group of sections contracted for originally by Agnew & Co. On January 17th it was assigned by them to Halverson, Richards & Co. In the new hands the work has been pushed forward vigorously. On May 15th the Chief Engineer recommended a suspension of Clause J on this section, and on the 16th of the same month, your Honorable Body passed an order conforming to the recommendation (pages 1946-7). On May 28th the Chief Engineer asked permission to purchase such timber as might be necessary to add to the stock on hand (remaining over from other work) and arrange for the erection of a trestle to accommodate the Western Stone Company's track during the construction of the Channel (page 1972), and on June 6th (page 1985) you granted his request and authorized the work, limiting the expense to \$1,200. He arranged with Halverson, Richards & Co. for this work upon very favorable terms.

The revised estimates for this section are as follows:

Glacial drift, 115,450 cu. yds. at 26c....	\$ 30,017 00
Solid rock, 1,022,310 cu. yds. at 76.9c...	786,156 39
Settlement of Agnew claims for extras.....	3,000 00
Trestle and track changes.....	1,012 30
Total cost.....	\$820,185 69
Amount earned to Jan. 1st, 1895....	481,859 90
Unfinished work.....	\$338,325 79
Reserved percentages.....	59,730 95
Balance required to complete....	\$398,056 74

Proportion of work completed, 58.75 per cent, nearly.

At the time this section was assigned, it was delinquent \$170,486.76; it is now \$19,658 15 behind progress, showing \$373,195.80 earned in eleven and one-half months since assignment.

Section 10—E. D. Smith & Co., contractors. The work on this section has progressed so smoothly that the record is brief. January 1st, 1894, it was in arrears \$75,400.59; January 1st, 1895, it is \$143,408.75 ahead of progress requirements, showing \$505,050.40 earned within twelve months.

On January 24th the Chief Engineer recommended that Clause J be suspended on this section, and your Honorable Board

ordered that it should be so suspended (pages 1718-19). This section only appears upon the records again on December 19th, when you authorized payment for stairway leading into the Channel, which had been erected for the use of the thousands who visit this section.

The revised estimates for this section are as follows:

Glacial drift, 62,083 cu. yds. at 25c..	\$ 15,520 75
Solid rock, 1,199,546 cu. yds. at 80c..	959,636 80
Levee work on force account.....	24,063 17
Changing Western Stone Co.'s tracks and maintaining same.....	22,169 82
Building stairway.....	59 35
Protecting levee at Quarry No. 5...	1,400 58

Total cost.....	\$1,022,850 47
Amount earned to Jan. 1st, 1895..	785,543 57

Unfinished work.....	\$ 237,306 90
Reserved percentage.....	92,238 75

Balance required to complete..	\$ 329,545 65
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Proportion of work completed, 76.8 per cent, nearly.

Section 11—This is the first of the original group of three sections contracted for by Mason, Hoge & Co. Except for the regular semi-monthly estimates, of large proportions, this section has but little mention in the proceedings of your Honorable Body.

A contention has existed relating to the completion of levees on this and the adjoining section (No. 12), on which the Chief Engineer requires these levees to be completed to full grade and prism under his construction of the original contract, without extra compensation. The contractors demur to this and refuse to accept the ruling made by the Chief Engineer. They have, however, under protest, done sufficient work upon these levees to make them safe against floods, to be anticipated the coming season (see pages 1811-2, also page 2297).

On December 12th the Chief Engineer and Attorney transmitted to you a contract for cement masonry in clay pockets on this section, with price fixed at \$3.50 per cubic yard (pages (2346-7).

On January 1st, 1894, this section was \$22,789.05 in arrears on progress account, it is now \$34,649.65 in advance of progress. The amount earned between the two dates named is \$321,948.35.

The revised estimates for this section are as follows:

Glacial drift, 49,788 cu. yds. at 30¼c...	\$ 15,060 87
Solid rock, 100,183 cu. yds. at 79¼c....	793,437 53
Core in levee, force account work....	17,907 10
Levee emergency work.....	14,113 82

Total cost.....	\$840,519 32
Amount earned to Jan. 1st, 1895.....	559,657 32

Unfinished work.....	\$280,862 00
Reserved percentage.....	65,954 55

Balance required to complete....	\$346,816 55
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Proportion of work completed, 66.56 per cent, nearly.

Section 12—This is the second section of the original group of three contracted for by Mason, Hoge & Co. Like Section 11, it takes up but little space in the records of your Honorable Body, although it has levied heavily upon your treasury.

The same contention about completing the levee to full grade and prism exists upon this section, as on Section 11, and the same reports in relation thereto are found in the records (pages 1861-2 and 2297).

On December 12th the Chief Engineer and Attorney transmitted to you a contract for cement masonry in earth pockets on this section, fixing the price at \$3.50 per cubic yard (pages 2346-7).

The revised estimates on this section are as follows:

Glacial drift, 41,739 cu. yds. at 30¼c..	\$ 12,626 05
Solid rock, 1,000,500 cu. yds. at 79¼c..	792,896 25
Retaining walls, 10,000 cu. yds. at \$3.50.....	35,000 00
Core in levee, force account.....	7,541 87
Deepening River Channel.....	8,942 88

Total cost.....	\$857,007 05
Amount earned to Jan. 1st, 1895....	521,655 55

Unfinished work.....	\$335,631 50
Reserved percentage.....	63,146 35

Balance required to complete....	\$398,497 85
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Proportion of work completed is 60.87 per cent, nearly.

This section was \$6,537.44 in arrears on progress account on January 1st, 1894, and it is \$7,342.70 behind January 1st, 1895. The total earned between the dates named is \$278,945.55.

Section 13—This is the third and last of the original group of sections contracted for by Mason, Hoge & Co. At the first of January, 1894, this section was \$48,539.28 ahead of progress, and on January 1st,

1895 it is \$133,123.97 ahead of progress, showing \$371,432 75 earned in the twelve months. Except that it figures regularly and largely as a creditor on the semi-monthly vouchers of the District and has passing mention in the reports of the Superintendent of Construction, I fail to find any other allusion to it in the records than the transmittal to your Honorable Body by the Chief Engineer and Attorney on December 12th of a contract fixing the price of retaining walls in earth pockets at \$3.50 per cubic yard.

The revised estimates on this section are as follows:

Glacial drift, 35,000 cu. yds. at 26c....	\$ 9,100 00
Solid rock, 1,053,700 cu. yds. at 74 $\frac{3}{4}$ c....	787,640 75
Retaining walls, 20,000 cu. yds. at \$3.50	70,000 00
Total cost.....	\$866,740 75
Amount earned to Jan. 1st, 1895....	661,624 47
Unfinished work.....	\$205,116 28
Reserved percentage.....	82,703 06
Balance required to complete....	<u>\$287,819 34</u>

Proportion of work completed, 76.34 per cent, nearly.

Section 14—This section was originally let to the McCormick Construction Company. This company became so much involved that it passed into the hands of a Receiver, Mr. P. J. Sexton, on or about December 4th, 1893. On December 11th of the same year, said Receiver addressed your Honorable Body asking for a stay of proceedings (page 1616) under your notice of intention to forfeit, issued November 17th, 1893 (page 1577). This request was referred to the Joint Committee on Judiciary and Engineering together with the Attorney (page 1616).

On January 15, 1894, this contract was sold under a decree of Court to Smith & Eastman. On January 13th (page 1675) the Joint Committee on Judiciary and Engineering, and Engineering and Finance, submitted a report under date of January 10th, recommending the confirmation of this sale, subject to the agreements and stipulations which accompanied their report (pages 1776-9). The recommendations of this report were adopted by a unanimous vote of all present (pages 1675-6). At the time of this assignment the section was delinquent on progress account \$172,797.81. This delinquency has increased steadily

until it amounted on January 1st, 1895, to \$247,605 25.

There is a controversy on this section over the right of the District to enforce the terms of the contract relating to the construction of the levees on and beyond the section, as the same is construed by the Chief Engineer.

And further, the contractors demand payment for any filling they may do behind the retaining walls, which demand is not sustained by the terms of the contract as construed by the Chief Engineer. For correspondence on these subjects see pages 2363-5. No price has been agreed to on cement retaining walls.

The revised estimates on this section are as follows:

Glacial drift, 213,045 cu. yds. at 36c....	\$ 76,696 20
Glacial drift, 166,210 cu. yds. at 20c....	33,242 00
Solid rock, 1,023,500 cu. yds. at 73c....	747,155 00
Retaining walls, 22,000 cu. yds. at \$3.25.....	71,500 00
Total cost.....	\$928,593 20
Amount earned to Jan. 1, 1895.....	318,610 00
Unfinished work.....	\$609,983 20
Reserved percentage.....	39,826 25
Balance required to complete....	<u>\$649,809 45</u>

Proportion of work completed, 34.31 per cent, nearly.

Section 15—The advertisement of this section for contract was ordered by your Honorable Body on June 20th (pages 2004-16). The bids were opened on August 22d, (pages 2113-26). The tabulation showed Wright, Meysenburg, Sinclair & Carry to be the lowest bidders.

On August 29th the Joint Committee on Engineering and Finance reported in favor of letting the contract to the said lowest bidders, and their report was adopted by a unanimous vote of all present.

The revised estimates on this section are as follows:

Glacial drift, 36,000 cu. yds. at 19c....	\$ 6,840 00
Solid rock, 639,700 cu. yds. at 59c.....	377,423 00
Retaining wall, 37,400 cu. yds. at \$2.35.	87,890 00
Total cost.....	\$472,153 00
Amount earned to Jan. 1st, 1895....	11,323 00
Unfinished work.....	\$460,835 00
Reserved percentage.....	1,416 00
Balance required to complete....	<u>\$462,241 00</u>

The proportion of work completed is 2 4 per cent, nearly.

Progress of Work—On January 1st, 1895, the estimates and reports in our hands showed a condition which is not satisfactory. Although it is true that 44.43 per cent of the entire work now under contract has been completed, yet it is also true that this percentage of progress is not spread evenly over the whole work. One of these sections is now in process of re-letting. Seven sections are now well, some of them largely, in advance of the progress requirements. Six (6) sections are partially up to progress requirements. Ten (10) sections are making such progress, under able management, that their completion on contract time may be regarded as an assured fact, and five (5) sections are so much in arrears that there seems but little hope of their ever forging ahead and reaching progress requirements. These seemingly hopeless sections present questions as to the proper course of procedure, which demand the most serious consideration at your hands.

When what has been accomplished up to January 1st, 1895, is considered in connection with the period of experimentation, through which even our most experienced contractors were compelled to pass before they were enabled to find and adopt the methods best suited to the needs of their work, it is hazarding nothing to assert that the entire work now under contract, together with such essential auxiliary work as must be done, can be completed and ready to perform its health-giving and beneficent functions in the fall of 1896.

A moderate estimate of the value of the machinery and other equipment planted upon this work by the contractors is \$3,000,000. This is in the hands of men of natural ability to whom each month brings experience which is turned to advantage in the work of the month to come. Examination of the rate of progress for 1894 shows that it increased steadily until the maximum, \$666,481.81, was reached in the month of August, since then it has averaged \$568,031.32 per month, and was \$553,823.44 for the month of December. With such a showing as this the gift of prophecy is not needed to predict with assurance that the work will be completed in the fall of 1896.

Surface Ditches—Among the items not included in the original estimates of the cost of this work may be mentioned surface ditches. These are essential to the protection of the sides of the Channel from the

damaging effects of surface water. On May 10th the Chief Engineer reported upon this subject to your Honorable Body, and you authorized their construction by an order passed May 16th (pages 1945-6).

Cement Masonry—On August 2d, 1893 (page 1361), the Chief Engineer brought to your attention the inadequacy of dry rubble walls for the permanent protection of that part of this Channel for which wall protection had been made a part of the plans. Again on May 28th, 1894, he addressed a communication to you upon the same subject, and on May 29th (page 1971) you passed an order adopting for the entire work the specifications for cement masonry, which had been embodied in the revised specifications for Section No. 1, as an alternative proposition (page 1745).

COLLATERAL WORKS.

River Diversion—This improvement is now practically completed except that the levee on Section E has not been built on its proper line as provided for in the contract, which provision however will be complied with.

On Section A the levee, on January 1st, was not finished but was very nearly so. At Columbia Park an obstruction in the form of a low levee still remains. On Section 5 a small amount of rip rap remains to be placed on the levee. On Section 6 a small amount of material is yet to be removed from the channel. The levee is being raised with hard material and rip-rapped, all of which will require an expenditure of \$5,509.36, which amount is included in the revised estimates for this section. On Section 7 about \$2,764 remains to be expended on levee construction for raising and protecting with hard material and rip rap; this amount is covered in the revised estimate for this section. The remaining portion of the channel is completed as far as the Romeo road, beyond which no diversion work has been projected. The levees on Sections 11 and 12 have been strengthened by the contractors as stated in that portion of this report which refers to those sections. Removing glacial drift from River Channel north of Romeo road was the last River Diversion work ordered by you on August 29th, in accordance with the recommendations of the Chief Engineer and Attorney (pages 2165-66). The yardage moved under this order was 11,-

483 cubic yards, all of which was placed in the levee on Section 12, as ordered by the Engineer. The cost of this work was \$3,551.05, all of which is included in the revised estimate for said Section 12. The total cost of the River Diversion, including the Spillway and levees as shown by our estimates up to December 31st is \$1,079,397.40. All expenditures pertaining to the River Diversion are embodied in the revised estimates.

Spillway—The Spillway was completed during the early fall at a total cost of \$20,518.40. The flood of March last demonstrated the great value and efficiency of this work, and Chicago then reaped the first substantial benefit from the great scheme which she has intrusted to your wisdom and loyalty to her best interests. This flood, but for the intervention of the Spillway, would have swept pollution and disease into the fountain of her drinking water as has been done year by year in the past, but its turbid waters were turned aside save for a limited flow of about sixty-one hours only, which was not sufficient to cause any damage. It is true that the flood in question was not a maximum one, and it should therefore be stated that the Spillway will be raised to such a height as will restrain even maximum floods from flowing toward Chicago as soon as provision is made for carrying them through Joliet by the execution of the work of deepening and enlarging the Channel of the Desplaines through that city, according to the plans which we have under advisement. Your order for the final payment was passed October 17th (page 2262). The construction of the Spillway made the elevation of the Santa Fe track, which crosses the Desplaines River just below it, a necessity. On March 14th the Chief Engineer transmitted a form of agreement with the Receivers of that company for doing this work (page 1814). This was referred to the Committee on Engineering and Finance, who, on March 21st reported favorably on it, and by a unanimous vote its execution was ordered (pages 1833-4). The cost of this completed work was \$5,875.65.

On April 10th the Chief Engineer made a report setting forth the necessity of raising the Calumet Terminal Railroad and its approaches and asking for an appropriation of \$1,600 for that work. This request

you granted (pages 1859-60-61), but on May 28th the Chief Engineer asked that the appropriation be raised to \$2,100, giving reasons therefor, and you passed an order granting his request (page 1971). This work was done by E. D. Smith & Co., late in the fall of 1894, at a total cost, including a bill of the railroad company for inspection, of \$1,880.54. The arrangement under which the Calumet Terminal Company allowed this work to be done, is set forth in correspondence between S. R. Ainsley, General Manager of that company, and the Chief Engineer of this District, which, with profile attached, will be found as file No. 393, in the Chief Engineer's office.

Removal of Muck, forced into the Desplaines River by levee on Sections A and B, was provided for on recommendation of the Joint Committee on Engineering and Finance, in a contract dated Sept. 26th (pages 2134-36). The amount of material removed under this contract was 122,842 cubic yards, at a cost of \$18,351.30.

Levee for Protecting Western Stone Company's Quarry, No. 5—On February 21st the Chief Engineer submitted a report showing that this levee has been constructed at a cost of \$1,400.58, and asked that a voucher be made in favor of the said company for the amount named. His communication was referred to the Committee on Judiciary (page 1788-9). On March 7th this Committee reported favorably, and on their recommendation the bill was ordered paid (page 1806).

Keeping Track to Western Stone Company's Quarry, No. 5, in Repair—On June 13th, the Joint Committee on Engineering and Finance reported on a bill of the Western Stone Company for track maintenance, and recommended its payment; and further, that this District continue to keep said track in repair until October 1st. This recommendation was concurred in by your Honorable Body and an order passed in conformity thereto. Under this order the expenditure amounted to \$2,995. The reason for this maintenance on the part of the District, was that the track had been changed to a new road-bed to accommodate our work, and this new road-bed was continually settling and getting out of shape.

Raising Guard Bank Between Lock No. 4 and Dam No. 1 at Joliet—On June

27th the Committee on Engineering and Finance reported to you, recommending that the easterly guard bank between Lock No. 4 and Dam No. 1 at Joliet be so raised and strengthened as to protect the town from damage by floods due to the extra volume of water which would be sent down the Desplaines as a result of the work of this District. Said report was accompanied by an agreement, specifications and plans to be executed by the Canal Commissioners of the Illinois and Michigan Canal as party of the second part. The recommendations of this report were adopted by a vote of seven (7) yeas and one (1) nay (pages 2026-29). The work done under this contract amounted, at the stipulated prices, to \$18,052.85. This is the only item of completed work which is not included in the revised estimates returned by the Assistant Engineers, but it is included in the revised estimates for the whole work submitted herewith.

NEW WORK.

The Controlling Works—These works, of such vital importance to the success of the great enterprise you have in hand, have been carefully considered during the past year, and alternative plans have been gotten up and the merits of each carefully weighed and contrasted. The plan which combines the greatest advantages with the least cost is a combination of lifting gates and a section of Bear Trap dam. There will be eight of these lifting gates working between solid masonry piers; they will be lifted vertically by mechanism, operated from bridges spanning the spaces between the piers, each space or opening will be 30 feet wide. These gates are a modification of what is known as the Stoney Gate, with special features designed for this work. The Bear Trap dam will be 160 feet between bulk heads. This dam will be unlike either the Lang, the Parker, or the common bear trap, as conditions obtaining on this work admit of a departure from those examples in several particulars. The designs for this work have been prepared under the immediate charge and direction of Mr. T. T. Johnston, First Assistant Chief Engineer. The estimated cost of this improvement is \$160,000.

Tail Race—On February 28th, 1894, pursuant to an order of your Honorable Board the Chief Engineer presented an estimate

on the cost of the work remaining to be done between the end of Section 14 and the weir dam below the Wire Mills (pages 1795-97). On June 6th the Chief Engineer presented map and cross sections of this work (page 1779), which were taken up and discussed in connection with the report of the Joint Committee on Engineering and Finance, the report of that Committee was adopted, fixing the route of the tail race west of the Wire Mill substantially as determined April 3d, 1893 (page 1886). The estimated cost of this work is \$425,260.

Work between the Waste Weir of the Tail Race and the Upper Basin at Joliet—This work consists of removing obstructions from the channel of the Desplaines, deepening same at different points and building such levees as are required. The estimated cost of this improvement is \$150,000.00.

Work through Joliet—This work consists of deepening and enlarging the channel of the Desplaines, making proper provisions for maintaining the navigation of the Illinois and Michigan Canal and affording necessary protection to the City of Joliet against flood damages. The estimated cost is \$1,760,000.00, nearly.

Bridges—On Nov. 14th (pages 2297-8) you rejected all bids for swing bridges at Romeo, Lemont and Willow Springs Highways upon the grounds that the work of excavation at those points was not far enough advanced to require immediate consideration, and it seemed to be the conclusion that temporary trestle bridges might more economically be provided at these points. I have, under your orders, prepared specifications and estimates for both fixed and draw bridges covering all such structures that it may be necessary to erect on the entire Channel, for your information, when considering the form of bridge you may ultimately deem best to adopt.

Miscellaneous Matters—Under this head are assembled several items of minor importance, which, however, are items of information, having more or less value:

Columbia Park—On March 1st the Columbia Park Company, by its Attorney, made claim for compensation on account of damages done to its property (page 1808). By permission, the Chief Engineer caused the property to be repaired in an acceptable manner to the Park authorities at a cost of

\$30. (See Proceedings, June 6th, page 1981). On November 27th claim was made by the Attorney above mentioned for the cost of painting the ceilings of the park buildings (page 2328). On December 11th the same parties made a request for protection against floods by the filling and raising of certain low grounds designated (page 2349). These claims were disallowed by a vote of six yeas on December 26th (page 2374).

Bridges Over the Illinois and Michigan Canal—At the beginning of the year there were bridges over the Illinois and Michigan Canal, owned by this District, as follows: At Summit one; opposite Section B, one known as the Piper bridge; a foot bridge known as the Griffin & Connelly; one bridge known as Koch's bridge, and a bridge at Sag. On March 21st (page 1832) you adopted the report of the Committee on Engineering and Finance, instructing the Chief Engineer to cause the foot bridge and the railroad bridge at Summit to be removed. This was done under an agreement with the Commissioners of the Illinois and Michigan Canal at a cost of \$350, which was paid May 9th (page 1933). The remaining bridges are still in place, the one opposite Section B is used by Heldmaier & Neu, the Koch bridge is used by Gilman & Co. and the Sag bridge by McArthur Bros. These bridges are maintained by the parties using them without cost to this District.

Romeo Road—Owing to refusal of the Highway Commissioners to co-operate with or contribute in any way to the plans for bridges and improvements on this road nothing has been done upon it. The references are as follows (pages 2021-2 and 2165-6).

Lemont Highway—Final payment to Alfred Roebuck for work done on said highway, ordered October 31 (page 2245).

Dam No. 1, Joliet—The report of the Joint Committee on Engineering and Finance recommending payment of \$1,000 to the Illinois and Michigan Canal Commissioners for repair of Dam, No. 1, adopted October 17th (page 2261). No agreement was reached with the Canal Commissioners under this order and hence the money was never paid.

THE ENGINEERING AND CONSTRUCTION DEPARTMENTS.

As heretofore organized, these depart-

ments have been separated into four divisions.

Division No. 1 has been the Division of Construction immediately in charge of U. W. Weston, Superintendent. The year opened with four sub divisions, in charge of assistant engineers. The Summit Division, in charge of Mr. E. R. Shnable, comprises Sections C, D, E, F, G and H—six sections.

The Willow Springs Division, in charge of Mr. H. B. Alexander, comprises Sections A, B, 1, 2, 3 and 4—six sections.

The Lemont Division, in charge of Mr. H. A. Miller, comprises Sections 5, 6, 7, 8, 9 and 10—also six sections.

The Lockport Division, in charge of Mr. C. L. Harrison, comprises Sections 11, 12, 13, 14 and 15—five sections.

When the sections east of Section A were about to be entered upon by contractors, it became necessary to create another division. This was placed in charge of Mr. Alexander E. Kastl, and headquarters were established at Brighton Park, where an office was leased. (See Proceedings Feb. 10, page 1733, and March 7, page 1806.) This Division comprises Sections I, K, L, M, N and O—six sections.

The importance of the work of the Construction Division for the year 1894 will be realized when the fact is stated that the estimates of the five Assistant Engineers, for the year, aggregate \$5,887,940.64, and the material removed foots up 9,320,600 cubic yards of glacial drift and 3,637,680 cubic yards of solid rock, or a total of 12,958,280 cubic yards.

Division No. 2.—This Division is in the immediate charge of Mr. T. T. Johnston, First Assistant Chief Engineer. The work of the Division is quite varied, and includes the preparation of plans for structures; the calculation and determination of all questions pertaining to the hydraulic problems met with in our work; also surveys for and estimates of work to be done in conformity with the full scope and intent of this enterprise; besides the testing of cements and other materials entering into the construction.

The field work has been in charge of Assistant Engineer A. C. Schrader. The work of the past year includes flood measurements of the Desplaines, which gave results corroborative of the curves previ-

ously established, and demonstrated the correctness of the calculations on which the sections and grades of the Diversion Channel had been computed to insure sufficient capacity for the service it must perform. The River Diversion work was re-measured and computed, and the quantities returned by the Construction Department thereon were verified and confirmed. Borings were made for determining the character of foundations for bridges crossing the Channel (for authority see Proceedings March 21st, page 1831).

Test Pits were put down on Section E and F (page 2080). Very careful and accurate surveys have been made through Joliet, extending from the Elgin, Joliet and Eastern Bridge, down to Hickory Creek along both banks of the Desplaines for the purpose of determining the proper construction over that stretch of the river, and showing what property it would be necessary to acquire to enable the work to be executed.

The plans for the controlling works have been worked out upon alternative propositions and the details of the plans finally selected are being worked out and will soon be ready for presentation. Surveys were made of railroad locations between the Illinois and Michigan Canal and the Sanitary District Main Channel between Lemont and a point about one and one-half miles east of the Summit Range line and estimates made thereon for use in negotiations pending with the Chicago, Santa Fe and California Railroad. Estimates were made on alternative lines for the same purpose. A party has also been employed making a topographical survey for the purpose of supplying the data which is needed for completing the topographical map ordered by you (November 16th, 1892). The authority for this survey will be found on pages 2102 and 2340.

Division No. 3—This division is in the immediate charge of Mr. Edgar Williams, Second Assistant Chief Engineer. Here all of the maps pertaining to the District and computations of lands taken for its right of way are made. The large amount of work turned out from this division, and the excellence of its productions, are in evidence as to its efficiency. A reference to the monthly reports of this division brings out very forcibly the volume and the value of the work accomplished by it. This di-

vision supplied to the public schools of Chicago the two hundred maps of the Sanitary District, covered in your order of November 28th (page 2326). The plat books called for by your order of January 10th (page 1667) are well advanced, and when completed will be amongst the most valuable of the records of the District, as they are made from actual surveys of the lands constituting the right of way, and the areas and all other necessary data are correctly shown thereon.

Owing to poor health Mr. Williams tendered his resignation, to take effect November 15th last. The resignation was not accepted, however, and a vacation was accorded him in the hope that he would recuperate and return to the discharge of duties which he has performed so acceptably to your Honorable Board and to me. He has returned to his duties, and his valuable services are saved to the District.

Division No. 4—This is the Record Division, and in it are kept all of the records, accounts, correspondence and documents of the Engineering Department. On November 20th the Chief Engineer reported the resignation of Mr. Robert H. Cowdrey, Record Clerk, who had been in charge of this Division for more than two years, and who resigned to devote his time to a private business enterprise; and recommended the appointment of Mr. William Trinkaus to the vacant position. Mr. Trinkaus has been the Assistant Record Clerk for a long period and was thoroughly familiar with the duties of the office. You confirmed Mr. Trinkaus' appointment on Nov. 21st (page 2313).

An order issued by the Chief Engineer, with your concurrence, on April 11th (page 1859), in the interest of better discipline in the force, conduced to that and strengthened the hands of the Assistant Engineers greatly.

As the Department has been organized under the rules affecting it, there has been room for discord between the Chief Engineer and the Superintendent of Construction, as the duties of the former necessarily trench upon the prerogatives of the latter official. This has been avoided, however, as the Superintendent has been more loyal to the interests of the work than he has been tenacious of technicalities, and the Chief Engineer acknowledges his high appreciation of the good sense and good

feeling shown by the Superintendent of Construction throughout his intercourse with him.

The Chief Engineer wishes to record his high appreciation of the ability of the First Assistant Chief Engineer, as shown by the efficient discharge of the various duties which have devolved upon him, duties requiring ripe judgment, based upon thorough technical knowledge, of both which qualifications he has shown himself possessed.

I feel that this District has been peculiarly fortunate in securing the services of such competent, loyal and efficient men as are found filling what are known as the confirmed grades, and I think that the personnel of the force, in all grades, challenges comparison with the personnel of any engineering force in the employ of public or private corporations throughout the land.

The aggregate force of the four divisions will average for the year last past about 130 men, when the men on special service are taken into account.

The total cost of the Department for salaries, office rents outside of the general office, traveling expenses, special investigations and engineering and draughting supplies aggregates \$173,858.55. The construction estimates for the year aggregate \$5,887,940.64. Add to this the cost of engineering as above stated and we have a total of \$6,061,799.19. The cost of engineering and superintendence for the year was therefore a shade below 2.87 per cent.

It is proper to note the fact that the cost of keeping the Tow-Path in repair, for the use of the District as a highway, amounting to \$3,181.41, is also charged up to engineering and forms a part of the \$173,858.55 before mentioned.

Reduction of Forces—On December 5th an order was passed by your Honorable Board (pages 2342-3) having for its ultimate object a reduction in the number of men employed and a corresponding reduction in the expenses of the department. Pursuant to this order the Committee on Engineering and Finance called upon the Chief Engineer to report on an organization of one hundred men all told. This was done on the 31st of December. Under this order some good men will undoubtedly have to be dispensed with and the work of the department will suffer to that extent. Those who remain will have more work to do

than heretofore, and if inefficient men are retained in the force their unfitness will, under the new conditions, be made very apparent and they must in time make way for the more capable and efficient.

While this force ought to, and no doubt will, keep up the routine work of the department, yet it must be borne in mind that certain work which has been abandoned for the winter must be taken up again in the spring and then an additional force will have to be organized to meet the absolute requirements of the construction.

The work to which reference is made above is that of the retaining walls, 382,358 cubic yards of which have to be built. Results creditable to this District can only be reached by the most rigid inspection and strict enforcement of the terms of the specifications as to materials, methods of handling same, and workmanship. The inspection of cement, as we have conducted it so far, will not meet the requirements that will obtain when hundreds of barrels will be needed to meet the daily consumption in the work. These are questions which it is not necessary to discuss further here, but right conclusions must be reached within a very few weeks or the season will open for work and we shall be unprepared to meet its requirements.

I must now acknowledge my sincere appreciation of the uniform consideration which you have shown me and the way in which you have strengthened my hands for the discharge of the duties which you have intrusted to me.

Hoping that you may carry this work through to completion and reap the reward of honor and renown for a great trust honestly administered, and a mighty task ably accomplished. I am sirs,

Yours most respectfully,
(Signed) ISHAM RANDOLPH,
Chief Engineer.

(Accompanied by four (4) exhibits, with tables.)

(EXHIBIT 1.)

"CHICAGO, Jan. 11, 1895.

Mr. Isham Randolph, Chief Engineer:

DEAR SIR—I herewith submit the financial report of the Record Division of your department for the year ending December 31st, 1894.

The total amount received by the Engi-

neering Department since its inception is \$7,943,483 97. Of this amount all is disbursed except a property inventory rated at \$17,353.80 and an emergency fund of \$4,400; \$3,000 of this fund is in your hands and the remaining \$1,400 is accounted for by the Clerk of the District.

In order that the account of the Engineering Department may balance with that of the Clerk, it is necessary to add the Clerk's exhibit of the Engineering Department's total receipts, viz : \$33,621.67, and to deduct all vouchers not passed by the Board of Trustees previous to December 31st, 1894.

The following is a summary;

Engineering Department—

Amount disbursed to Jan. 1, 1894....	\$ 2,484,270 49
Amount disbursed for the year 1894.	5,316,815 93
Property on hand Jan. 1, 1895, as per inventory.....	17,363 80
Emergency Fund in hands of Chief Engineer.....	3,000 00
Emergency Fund in hands of Clerk.	1,400 00
Amount 1890 account not previously disbursed	61,706 24
Amount 1891 account not previously disbursed	52,466 00

Amount 1892 account not previously disbursed	\$ 6,461 51
	<u>\$ 7,943,483 97</u>

By adding the total receipts of the Engineering Department, as per schedule of the Clerk, viz.....	83,621 67
	<u>\$ 8,027,105 64</u>

And deducting the unpaid vouchers in the hands of the Clerk, viz.....	319,613 30
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Will show the Clerk's total expenditures of the Engineering Department	\$ 7,707,492 34
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The first of the following tables is a detailed statement for 1894 of the amount expended for various purposes, and as authorized by the Board of Trustees.

The second one shows the total disbursements to Dec. 31, 1894. In this latter table the Construction Account is separated from the Engineering expenses.

Very respectfully,

(Signed) WILLIAM TRINKAUS,
Record Clerk."

(Enclosing two (2) tables).

TABLE NO. 1

CLASSIFICATION—1894.	January.	February.	March.	April.	May.
Locating Route.....	\$ 176 50	\$ 760 17	\$ 66	\$ 60	
Borings and Test Pits.....				200 00	\$ 603 44
Maps, Plans and Specifications.....	1,012 30	1,325 62	1,156 35	1,039 08	1,171 33
Chicago River Survey.....	9 00				
Right of Way.....	281 70	360 47	317 10	323 18	343 83
Flood Measurements.....	259 61	288 04	1,693 26	598 29	747 21
Disposal of Flood Waters at Joliet.....	638 24	401 14	684 23	488 79	856 83
Regular Contractors' Estimates.....	119,042 32	245,954 66	191,098 98	290,935 09	380,225 96
Extra Work, Main Channel.....				5,302 00	4,759 34
Extra Work, River Diversion.....	3,207 35	432 54	13,091 27	1,322 02	225 11
Levees, Trestles and Embankments.....	51,956 66	3,558 66	5,797 35	10,662 00	7,880 57
Spillway.....	61 50	2,033 00			
Towpath.....	123 50	120 00	142 50	146 50	424 75
Building Western Stone Co.'s Bridge.....	1,528 26	13 33	15 35		
Building Stephens Street Bridge.....	5,128 33	13 33	8 00		
Building A., T. & St. Fe R. R. Bridge.....	1,659 20	13 34	18 68	222 02	
Repairing and Removing Bridges.....			66 25		350 00
Saving of Building Sand.....					
Mortar, Sand and Cement Tests.....					
Saving of Dimension Stone.....					
Photographs of Works.....					
Public Reports.....				18 60	21 00
General Account.....	1,086 60	961 57	977 07	943 13	905 23
Total.....	\$186,171 07	\$256,235 87	\$215,067 05	\$312,201 30	\$398,514 65

OF EXHIBIT 1.

June.	July.	August.	September.	October.	November.	December.	Total.
							\$ 937 93
\$ 221 58	\$ 1,919 91	\$ 7 70	\$ 584 56				3,537 19
1,356 40	1,290 47	1,749 12	1,793 33	\$ 1,821 26	\$ 1,778 01	\$ 1,595 45	17,088 72
							9 00
916 30	867 57	234 73	181 67	238 32	136 09	199 25	4,400 21
332 05	95 60	134 71	170 00	20 00	100 00	86 73	4,524 90
630 31	685 21	1,022 91	1,194 25	1,359 32	1,749 17	1,562 83	11,273 23
425,727 19	532,318 67	549,248 15	556,783 79	503,212 95	498,867 33	730,689 44	5,024,104 53
810 00	2,584 17						13,455 51
34 16	152 50	85 65	86 66		8,123 94	10,231 84	36,993 04
8,777 57	5,837 16	9,817 20	5,047 00	6,080 00	4,200 20	27,437 46	147,051 83
	60 00	140 00	84 37	4,762 02			7,140 89
426 50	330 00	442 00	348 75	290 41	386 50		3,181 41
1,666 50	789 50				539 01	407 08	4,959 03
						358 00	5,507 66
						16 55	1,929 79
			5,875 65			1,831 11	8,123 01
532 75	248 88						781 63
		100 00	233 00	475 00	300 00	147 70	1,255 70
		800 00	1,500 00	1,600 00	2,808 00	260 00	6,968 00
186 00	180 00	200 50	220 40	125 35	213 75	179 73	1,305 73
					331 50	732 03	1,103 13
1,061 21	990 73	909 48	919 15	846 76	812 70	770 18	11,183 86
\$442,678 52	\$548,349 77	\$564,892 15	\$575,022 58	\$520,831 39	\$520,346 20	\$776,505 38	\$5,316,815 93

TABLE NO. 2 OF EXHIBIT 1.

	Disbursements to Dec. 31, 1893.		Disbursements for 1894.		TOTALS.	
	Engineering.	Construction.	Engineering.	Construction.	Engineering.	Construction.
Locating Route.....	\$81,285 01		\$ 937 93		\$82,222 04	
Borings and Test Pits.....	12,435 61		3,537 19		15,972 80	
Maps, Plans and Specifications.....	11,658 34		17,088 72		28,747 06	
Chicago River Survey.....	17,073 66		9 00		17,082 66	
Survey of street lines adjacent to Chicago River.....	7,476 32				7,476 32	
Right-of-way.....	13,383 65		4,400 21		17,783 86	
Flood measurements.....	7,678 25		4,524 90		12,203 15	
Disposal of flood waters at Joliet.....	3,508 03		11,273 23		14,871 26	
Regular contractors' estimates.....	102,552 00		110,438 31		212,990 31	
Regular contractors' estimates.....		\$1,820,796 97		\$4,913,666 22		\$6,734,463 19
Extra work—Main Channel.....				13,455 51		13,455 51
Extra work—River Diversion.....	7,467 08		2,256 34		9,723 42	
Extra work—River Diversion.....		298,970 71		34,736 70		333,707 41
Diversions—North Branch Chicago River.....	3,643 51				3,643 51	
Levees, trestle and embankments.....	636 36		177 39		813 75	
Levees, trestle and embankments.....		20,661 82		146,874 44		167,536 26
Spillway.....	1,401 04		353 87		1,754 91	
Spillway.....		13,731 39		6,787 02		20,518 41
Tonpath.....	2,064 63		3,181 41		5,246 04	
Tonpath.....	842 62		314 43		1,157 05	
Building Western Stone Company's bridge.....	914 33		71 33		985 66	
Building Western Stone Company's bridge.....		16,893 56		5,436 33		22,329 89
Building Stephens Street Bridge.....	699 50		29 62		729 12	
Building A. T. & St. Fe R. R. Bridge.....		16,880 23		1,900 17		18,780 40
Building A. T. & St. Fe R. R. Bridge.....	32 17				32 17	
Building Mt. Forest Foot Bridge.....	633 88		416 25		1,050 13	
Repairing and removing bridges.....				7,706 76		7,706 76
Repairing and removing bridges.....					2,339 43	
Office Building at Sag.....	2,339 43					781 63
Saving of building sand.....				781 63		781 63
Mortar, sand and cement tests.....				1,255 70		1,255 70
Saving of dimension stone.....				6,968 00		6,968 00
Erosion Test.....	1,496 75				1,496 75	
Temporary Sanitary Relief.....	237 60				237 60	
Photographs of Works.....	62 97		1,305 73		1,368 70	
Public Reports.....			1,103 13		1,103 13	
General Account.....			11,188 86		63,622 48	
General Account.....	52,338 62				120,633 75	
Amount for Surveys and Engineering—Work not previously disbursed.....						
Totals.....	\$281,951 36	\$2,302,319 13	\$173,858 55	\$5,142,957 38	\$576,443 66	\$7,345,276 51

CLASSIFICATION.

EXHIBIT No. 2.

CHIEF ENGINEER'S REPORT—1894.

See Next Page.

EXHIBIT NO. 2—CHIEF

Section.	DESIGNATION.	Assistant Engineer's Preliminary Estimates.	Amount Earned, Regular Vouchers, Including January 1, 1895.	Amount Earned, Collateral Vouchers, Including January 1, 1895.
O	.....	\$344,783 93	\$110,464 81	.....
N	.....	256,183 89	16,399 00	.....
M	.....	156,858 45	74,604 60	.....
L	.....	217,070 56	90,245 70	.....
K	.....	288,989 25	103,650 00	.....
I	.....	284,962 25	170,100 00	.....
H	.....	312,339 28	41,018 76	.....
G	.....	381,941 00	147,813 68	.....
	.....	348,749 52	157,350 16	.....
F	Spillway.....			\$20,518 41
	Spillway, levees.....			11,653 09
	Raising Santa Fe bridge.....			5,875 65
	.....			\$38,047 15
	Streeter & Kenefick, regular.....	\$606,613 14	\$155,342 28	.....
	Angus & Gindele, regular.....		13,289 13	.....
	.....		\$168,631 41	.....
E	Reserve is difference, A. & G. and S. & K.....			.....
	Overhaul, River Diversion.....			\$2,579 45
	Summit Highway.....			190 01
	.....			\$2,769 46
	.....	\$636,997 02	\$395,537 41	.....
D	Raising C. & C. R. R. bridge.....			\$1,831 11
	Pile Trestle.....			1,000 00
	.....			\$2,831 11
	Bill of N. P. R. R. ....			.....
	.....	\$ 486,319 17	\$ 224,548 14	.....
C	Illinois and Michigan Canal Levee.....			\$ 579 08
	Building Sand saved.....			781 63
	.....			\$ 1,360 71
	.....	\$ 485,120 38	\$ 218,457 81	.....
B	Illinois and Michigan Canal Levee.....			\$ 1,680 12
	Revetting Muck Levee.....			182 00
	.....			\$ 1,862 12
	.....	\$ 913,739 02	\$ 300,158 08	.....
A	Muck in River Diversion.....			\$ 18,351 30
	Trestle			8,597 35
	Illinois and Michigan Canal Spoil Bank.....			5,888 63
	River Diversion below grade.....			6,500 16
	Levee Borrow.....			30,960 00
	Levee Overhaul.....			6,740 00
	Revetting Muck Levee.....			407 40
	Flood Damages.....			847 40
	.....			\$ 78,292 24

ENGINEER'S REPORT, 1894.

Total Amount Earned on Section, Including January 1, 1895.	Amount Remaining to be Earned on Regular Contracts.	Amount Remaining to be Earned on Collateral Contracts.	PERCENTAGE RESERVED ON REGULAR CONTRACTS.			Percentage Reserved on Collateral Contracts.	Total Amount Remaining to be Paid on Each Section.
			12½%	10%	Total.		
\$110,464 81	\$234,319 12	.....	\$13,634 32	\$1,390 24	\$15,024 56	.....	\$249,343 68
16,399 00	239,784 89	.....	1,844 89	1,639 90	3,484 79	.....	243,269 68
74,604 60	82,253 85	.....	8,732 08	4,747 96	13,480 04	.....	95,733 89
90,245 70	126,824 86	.....	10,549 60	5,848 93	16,398 53	.....	143,223 39
108,650 00	185,339 25	.....	12,336 88	4,955 00	17,291 88	.....	202,631 13
170,100 00	114,862 25	.....	21,018 44	1,952 50	23,970 94	.....	137,833 19
41,018 76	271,320 52	.....	4,614 63	4,101 76	8,716 39	.....	280,036 91
147,813 68	234,127 32	.....	16,800 53	13,400 48	30,210 01	.....	264,337 33
.....	.....	.....	\$19,668 77	.....	.....	.....	.....
.....
\$195,397 31	\$153,352 21	0.00	.....	.....	\$19,668 77	.....	\$173,020 98
.....	.....	.....	\$19,417 78	.....	\$19,417 78	.....	.....
.....	.....	.....	1,569 27	794 94	2,304 21	.....	.....
.....	.....	.....	.....	.....	\$21,721 99	.....	.....
.....	.....	.....	.....	.....	246 10	.....	.....
.....	.....	.....	.....	.....	.....	00.0	.....
.....	.....	.....	.....	.....	.....	00.0	.....
\$171,400 87	\$435,212 27	0.00	.....	.....	\$21,968 09	.....	\$457,180 36
.....	.....	.....	\$36,942 18	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	0.00	.....
.....	.....	.....	.....	.....	.....	0.00	.....
\$298,368 52	\$338,579 07	0.00	.....	.....	\$36,942 18	.....	.....
.....	\$49 43	.....	.....	.....	.....	.....	\$375,570 68
.....	.....	.....	\$28,068 52	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	0.00	.....
.....	.....	.....	.....	.....	.....	0.00	.....
\$ 225,908 85	\$ 260,410 32	0.00	.....	.....	\$ 28,068 52	.....	\$288,478 84
.....	.....	.....	\$ 25,280 61	\$ 16,212 06	.....	.....	.....
.....	.....	.....	.....	.....	.....	0.00	.....
.....	.....	.....	.....	.....	.....	0.00	.....
\$ 220,319 93	264,582 45	\$218.00	.....	.....	\$ 41,493 57	.....	\$306,204 02
.....	.....	.....	\$ 34,230 17	\$ 26,316 68	.....	.....	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
.....	.....	3,260.00	.....	.....	.....	\$3,096.00	.....
.....	.....	492.60	.....	.....	.....	674.00	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
\$ 378,450 32	\$ 531,536 10	\$ 3,752.60	.....	.....	\$60,546 85	\$3,770 00	\$599,605 55

EXHIBIT NO. 2—CHIEF ENGI

Section.	DESIGNATION.	Assistant Engineer's Preliminary Estimate.	Amount Earned, Regular Vouchers, Including January 1, 1895.	Amount Earned, Collateral Vouchers, Including January 1, 1895.
1	Alfred Harlev.....	\$ 1,286,190 98	\$ 31,163 32	.....
	Heldmaier & Neu.....		3,652 34	.....
	Griffiths & McDermott.....		129,429 30	.....
	Overhaul, Griffiths & McDermott.....		\$ 164,243 96	\$ 24,320 00
	River Diversion, Force Account.....			137,254 90
	River Improvement, J. Lehman.....			4,772 45
	River Dyke, Conley Brothers.....			300 00
	Protection Levee.....			673 50
	Illinois and Michigan Spoil Bank Levee.....			612 12
	Willow Springs Road.....			2,498 08
	Building repairs, and hay for floods.....			40 50
				\$ 170,471 55
2	River Diversion, Force Account.....	\$ 922,256 36	\$315,793 08	\$55,005 68
3	McArthur Brothers.....	\$ 836,769 37	\$ 19,793 70	.....
	Gilman & Co.....		307,985 20	.....
			327,728 90	.....
4	River Diversion, Force Account.....	\$1,022,199 72	\$ 324,213 05	\$79,910 23
5	River Diversion, Force Account.....	\$ 765,746 66	\$ 181,121 50	.....
	Spoil Bank removed.....			\$6,246 54
	Rip-rap on levee.....			4,501 17
				350 00
				\$ 11,097 71
6	Chas. Vivian & Co.....	\$ 755,530 17	\$ 205,868 50	.....
			5,302 00	.....
			\$ 211,170 50	.....
	Embankment.....			\$ 8,775 00
	Hard Material on Levee.....			850 00
	Raising Levee after completion.....			567 00
	Rip-rap on Levee.....			.....
				\$ 10,192 00
7	Embankment.....	\$ 827,485 33	\$ 367,138 00	.....
	Dimension Stone.....			\$ 1,950 00
	Earth Core.....			4,500 00
	Rip-rap on Levee.....			2,000 00
	Hard Material on Levee.....			1,386 00
	Raising Levee after completion.....			.....
				\$ 9,836 00
8	Improving Stephens street.....	\$1,028,130 72	\$562,909 75	\$ 500 00
	Atchison, Topeka and Santa Fe Railroad fence.....			232 02
	Waiver of Claims, A. & Co.....			2,000 00
	Dimension stone.....			1,363 00
	Road and river bridges.....			40,868 39
				\$44,953 41
9	Waiver of Claims, A. & Co.....	\$820,185 69	\$477,847 60	\$3,000 00
	Trestle bridge.....			1,012 30
	Glacial drift, 117 bridge approaches.....			.....
				\$4,012 30

NEER'S REPORT, 1894—(Continued).

Total Amount Earned on Sec- tion, including January 1, 1895.	Amount Remain- ing to be Earned on Regular Con- tracts.	Amount Remain- ing to be Earned on Collateral Contracts.	PERCENTAGE RESERVED ON REGU- LAR CONTRACTS.			Percentage Re- served on Collat- eral Contracts.	Total Amount Remaining to be Paid on Each Section.
			12½%	10%	Total.		
.....	\$ 3,568 93	\$ 2,610 90	\$ 6,179 83	.....	.....
.....	14,560 80	13,942 93	0.00 27,503 73	.....	.....
.....	\$5,680.00	.....	.....	.....	\$3,040.00	.....
.....	0.00	.....	.....	.....	0.00	.....
.....	0.00	.....	.....	.....	0.00	.....
.....	0.00	.....	.....	.....	0.00	.....
.....	0.00	.....	.....	.....	0.00	.....
.....	0.00	.....	.....	.....	0.00	.....
.....	0.00	.....	.....	.....	0.00	.....
.....	0.00	.....	.....	.....	0.00	.....
\$334,715 51	\$945,795 47	\$5,680.00	.....	.....	\$33,683 56	3,040.00	\$988,199 03
.....	\$38,930 92	\$4,345 74	.....	.....	.....
\$370,798 76	\$551,457 60	0.00	.....	.....	\$43,276.66	0.00	\$ 594,734 26
.....	0.00	.....	.....
.....	\$37,314 62	\$9,418 20	.....	.....	.....
\$327,728 90	\$509,040 47	.....	.....	.....	\$46,732.82	.....	\$ 555,773 29
.....	\$38,859 64	\$13,335 90	.....	.....	.....
\$404,123 28	\$618,076 44	0.00	.....	.....	\$52,195 54	0.00	\$ 670,271 98
.....	\$21,641 00	\$7,993 50	.....	.....	.....
.....	0.00	.....	.....	.....	0.00	.....
.....	0.00	.....	.....	.....	0.00	.....
.....	\$760.90	.....	.....	.....	0.00	.....
\$192,219 21	\$572,766 55	\$760.90	.....	.....	\$29,634 50	0.00	\$ 603,161 95
.....	\$ 25,342 06	\$ 3,132 00	0.00	.....	.....
.....
.....	\$10,719.80	.....	.....	.....	0.00	.....
.....	1,900.00	.....	.....	.....	0.00	.....
.....	163.89	.....	.....	.....	0.00	.....
.....	3,445.47	.....	.....	.....	.....	.....
\$221,362 50	\$517,938 51	\$16,229.16	.....	.....	\$ 28,474 06	0.00	\$ 562,641 73
.....	\$ 45,892 25	.....	.....	.....	.....
.....	\$ 993.85	.....	.....	.....	0.00	.....
.....	30,146.00	.....	.....	.....	0.00	.....
.....	0.00	.....	.....	.....	0.00	.....
.....	1,379.70	.....	.....	.....	0.00	.....
.....	1,000.00	.....	.....	.....	.....	.....
.....	384.28	.....	.....	.....	.....	.....
\$376,974 00	\$416,607 50	\$33,903.83	.....	.....	\$ 45,892 25	0.00	\$ 496,403 58
.....	\$70,363 72	.....	.....	.....	.....
.....	0.00	.....	.....	.....	0.00	.....
.....	0.00	.....	.....	.....	0.00	.....
.....	0.00	.....	.....	.....	0.00	.....
.....	\$37 00	.....	.....	.....	0.00	.....
.....	0.00	.....
\$607,863 16	\$420,230 56	\$37 00	.....	.....	\$70,363 72	0.00	\$490,631 28
.....	\$59,730 95	.....	.....	.....	.....
.....	0.00	.....	.....	.....	0.00	.....
.....	0.00	.....	.....	.....	0.00	.....
.....	\$264 16	.....	.....	.....	0.00	.....
\$481,859 90	\$398,061 63	\$264 16	.....	.....	\$59,730 95	0.00	\$398,056 74

EXHIBIT NO. 2—CHIEF ENGI

Section.	DESIGNATION.	Assistant Engineer's Preliminary Estimates.	Amount Earned, Regular Vouchers, Including January 1, 1895.	Amount Earned, Collateral Vouchers, Including January 1, 1895.
10	Roadway and River Diversion bridge.....	\$1,022,850 47	\$737,910 00	\$15,983 63
	River Diversion levee.....			24 063 17
	Changes in Western Stone Company's tracks.....			70 29
	Protection levee, Quarry 5.....			1,400 58
	Railroad track, Quarry 5.....			3,120 89
	Maintaining Western Stone Company's tracks.....			2,995 01
	Western Stone Company's roadbed.....			
	Stairway, Main Channel.....			
				\$47,633 57
11	Core in levee.....	\$840,519 32	\$527,636 40	\$17,907 10
	River Diversion force account.....			14,113 82
				\$32,020 92
12	River Diversion, Force Account.....	\$857,007 05	\$505,170 80	\$8,942 88
	Core in Levee, River Diversion.....			7,541 87
				\$16,484 75
13	.....	\$866,740 75	\$661,624 47	0.00
14	.....	\$9,8593 20	\$318,610 00	
15	.....	\$472,153 00	\$11,328 00	
	Grand Totals.....	\$18,973,025 65	\$7,813,425 57	\$606,780 91

NEER'S REPORT, 1894—(Continued).

Total Amount Earned on Sec- tion, Including January 1, 1895.	Amount Remain- ing to be Earned on Regular Con- tracts.	Amount Remain- ing to be Earned on Collateral Contracts.	PERCENTAGE RESERVED ON REGU- LAR CONTRACTS.			Percentage Re- served on Collat- eral Contracts.	Total Amount Remaining to be Paid on Each Section.
			12½%	10%	Total.		
.....	.....	.....	\$92,238 75	.....	.....	.....	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
.....	.....	\$167 25	.....	.....	.....	0.00	.....
.....	.....	59 35	.....	.....	.....	0.00	.....
\$785,543 57	\$237,080 30	\$226 60	.....	.....	\$92,238 75	0.00	\$329,545 65
.....	.....	.....	\$65,954 55	.....	.....	.....	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
\$559,657 32	\$280,862 00	0.00	.....	.....	\$65,954 55	0.00	\$346,816 55
.....	.....	.....	\$63,146 35	.....	.....	.....	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
.....	.....	0.00	.....	.....	.....	0.00	.....
\$521,655 55	\$335,351 50	0.00	.....	.....	\$63,146 35	0.00	\$398,497 85
\$661,624 47	\$205,116 28	.....	\$82,703 06	.....	\$82,703 06	.....	\$287,819 34
\$318,610 00	\$609,983 20	.....	\$39,826 25	.....	\$39,826 25	.....	\$649,809 45
\$11,328 00	\$460,825 00	.....	\$1,416 00	.....	\$1,416 00	.....	\$462,241 00
\$8,420,206 48	\$10,491,697 49	\$61,121 68	.....	.....	\$1,091,534 14	\$6,810 00	\$11,651,163 31

(Signed)

ISHAM RANDOLPH,
Chief Engineer."

EXHIBIT 3—CHIEF ENGINEER'S REPORT, 1894.

Statement of Amount of Work Done to and Including December 31st, 1893, and During 1894, also Total to Date as Per Vouchers, Regular Contracts.

SECTION.	MAIN CHANNEL, GLACIAL DRIFT.			RIVER DIVERSION, GLACIAL DRIFT.			MAIN CHANNEL, SOLID ROCK.			RIVER DIVERSION, SOLID ROCK.			RUBBLE MASONRY
	Jan. 1, 1895.	Jan. 1, 1894.	Difference.	Jan. 1, 1895.	Jan. 1, 1894.	Difference.	Jan. 1, 1895.	Jan. 1, 1894.	Difference.	Jan. 1, 1895.	Jan. 1, 1894.	Difference.	Jan. 1, '95 (Built in 1894).
O.....	518,821	00	518,821	7,670	00	7,600							
N.....	71,300	00	71,300										
M.....	343,800	00	343,800										
L.....	458,100	00	458,100										
K.....	414,000	00	414,000										
J.....	680,400	00	680,400										
I.....	141,444	00	141,444										
H.....	527,906	00	527,906										
G.....	504,393	244,712	259,681	158,294	134,336	23,858							
F.....	518,882	402,075	56,807	95,718	83,426	12,292							
E.....	1,117,872	227,317	890,555										
D.....	792,087	135,898	657,189	162,537	162,537	00							
C.....	600,477	00	600,477	208,626	204,626	4,000							
B.....	428,166	90,859	337,307	130,786	108,228	22,558							
A.....	570,527	91,000	479,527	5,876	5,876	00							
1.....	351,288	94,510	256,778	29,516	29,500	16	32,242	00	32,242	200,353	00	32,242	1,300
2.....	672,579	131,400	541,179				6,401	00	6,401	15,100	00	15,100	1,300
3.....	597,000	218,700	378,300				43,100	00	43,100	41,800	41,800	800	
4.....	540,900	136,100	404,800				363,400	67,300	296,200	41,800	41,800	800	
5.....	169,600	7,500	162,100	112,700	111,900	800	622,000	76,000	545,400	96 9 0	95,500	1,400	
6.....	41,600	7,500	34,100	56,600	52,900	3,700	568,400	80,600	487,800	16,000	16,000	00	
7.....	71,700	50,700	21,000	37,700	37,700	00	848,200	217,400	630,800	56,500	56,500	00	
8.....	20,300	25,900	3,300	27,400	27,400	00	635,300	297,100	338,200	11,483	11,483	00	
9.....	44,032	40,300	3,732	5,756	5,756	00	632,500	295,800	336,700				
10.....	27,400	27,400	00	11,739	00	11,739	873,700	376,800	496,900				
11.....	32,822	00	32,822				295,800	119,305	176,495				
12.....	343,700	43,066	300,634				9,700	00	9,700				
13.....	29,500	00	29,500										
14.....													
15.....													
Totals.....	11,471,018	2,227,321	9,243,697	1,137,788	1,060,885	76,903	5,136,285	1,500,805	3,635,480	922,083	220,483	2,200	2,600

EXHIBIT 4—CHIEF ENGINEER'S REPORT, 1894.

Estimated Cost of the Main Channel and Auxiliary Works of the Sanitary District of Chicago.

DESIGNATION OF WORK.		DESIGNATION OF WORK.	
Section.	Cost.	Section.	Cost.
O.....	\$ 344,783 93	2.....	922,256 86
N.....	256,183 89	3.....	836,769 37
M.....	156,858 45	4.....	1,022,199 72
L.....	217,070 56	5.....	765,746 66
K.....	284,989 25	6.....	755,530 17
I.....	284,962 25	7.....	827,485 33
H.....	312,339 28	8.....	1,028,130 72
G.....	381,941 00	9.....	820,185 69
F.....	348,749 51	10.....	1,022,850 47
E.....	606,613 14	11.....	840,519 32
D.....	636,997 02	12.....	857,007 05
C.....	486,319 17	13.....	866,740 75
B.....	485,120 38	14.....	928,553 20
A.....	913,739 02	15.....	472,153 00
1.....	1,285,190 98		
Total of Main Channel under contract.....			\$18,973,025 64
Levee, Lock 4, to Dam No. 1.....			18,052 85
Total Main Channel and Auxiliary work now under contract.....			\$18,991,078 49

Further Work Contemplated, but not Contracted for.

Regulating Works.....	\$ 160,000 00
Tail Race.....	425,260 00
Tail Race to Upper Basin.....	150,000 00
Between Section 15 and Upper Basin.....	\$ 735,260 00
Head Upper Basin through Joliet.....	1,760,000 00
	\$ 2,495,260 00
Fixed bridges.....	1,388,639 32
Total work yet to be contracted for on basis of fixed bridges..	\$ 3,883,899 32
Total covered by existing contracts.....	18,973,025 64
Total estimated cost of construction on basis of fixed bridges..	\$22,856,924 96
Total expenditures for Engineering and Superintendence up to December 31, 1894.....	\$ 596,575 89
Estimated future cost of Engineering and Superintendence...	405,066 12
Total cost of Engineering and Superintendence.....	1,001,642 01
Total cost of Engineering, Superintendence and Construction	\$23,858,566 97
Expended to December 31, 1894, for Construction.....	\$ 7,027,294 78
Expended to December 31, 1894, for Engineering and Superintendence.....	596,575 89
Total for Construction, Engineering and Superintendence....	7,623,870 67
Balance needed on basis of fixed bridges.....	\$16,202,644 85

The foregoing estimates will I believe be borne out by the actual cost of the completed work of the Sanitary District.

(Signed)

ISHAM RANDOLPH,
Chief Engineer.

CHICAGO, January 16, 1895."

ANNUAL REPORT OF POLICE DEPARTMENT
FOR 1894.

The Clerk presented the annual report of the Police Department, accompanied by property return, for the year ending December 31, 1894; and the report was read.

Mr. Cooley, seconded by Mr. Eckhart, moved that the report be ordered printed and, with the accompanying property return, placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE ANNUAL REPORT:

“CHICAGO, Jan. 15, 1895.

*To the Honorable the Board of Trustees,
of the Sanitary District of Chicago:*

GENTLEMEN—I have the honor to submit my report of the Police Department of the Sanitary District for the year ending December 31st, 1894.

While the year has been marked as a season of great unrest, and violent disturbances throughout the country have resulted therefrom, no riots have occurred within the District, and no strikes of laboring men resulting in disturbances that have made a single arrest for that cause necessary.

The year has been one of great activity in the prosecution of the work, and this, in view of the general depression and inactivity in almost every line of industry, has invited large numbers of laboring people to this work.

Naturally, many vicious and idle persons have followed the workers, and some of the latter have located permanently in the District. It is only fair to say that the laboring people have generally been well conducted, and the presence of the vicious has occasioned a large part of the work which the Department has been called upon to perform.

Many of the undesirable class have left the District with the advent of cold weather, and it is only reasonable to expect a season of comparative quiet until spring. No deaths have occurred in the Department during the year, and no serious injury to any of the officers, but very little sickness, and none of a serious nature.

I wish especially to commend the force, as at present organized, for their bravery, loyalty, sobriety and general efficiency.

I find it quite impossible to convey, by any tables or classification I am able to make, a correct idea of the amount of police duty actually performed by the Department.

Work in the twenty-nine sections under contract is being prosecuted, and the labor employed, almost without exception, lives in buildings located upon the right of way.

It is estimated that the average number of people living upon the work is at least 8,000. Each of the sections is equipped with valuable machinery and appliances which, in case of disturbance, could be easily destroyed. No buildings or machinery has been burned, and no damage or injury to equipments of any note has been reported, notwithstanding the facts that very few of the contractors employ watchmen upon their work.

The two railroads paralleling the work require and receive constant attention at our hands; in the one case that we may the better know of the idle or vicious persons who find their way into the District through this avenue, and in the other case that injury or annoyance to the roads or inconvenience to their passengers may not occur from persons who are alleged to be employed on the work.

We have, in several instances, taken freight trains from the possession of persons who had crowded upon them, thus enabling the train crews to proceed upon their way; have repeatedly removed obstructions left upon the railroad tracks; have extinguished fires upon their right of way, and have, as far as possible, kept suspicious persons away from railroad property.

The value of property reported as stolen has been very small, and no serious crime has been reported that the perpetrators were not apprehended and arrested except in two instances.

The right of way and territory adjacent thereto, between Western avenue and the Lockport road, a distance of about thirty miles, is being constantly patrolled.

The police force now consists of: Marshal, first sergeant (absent on sick leave without pay), five sergeants, forty patrolmen, one watchman, one driver, one hostler.

During the year four patrolmen have resigned and six have been dismissed.

The men are assigned to six stations as follows:

First District (station at Hyman avenue and Illinois and Michigan Canal)—One sergeant, six patrolmen, one watchman.

Second District (station at Summit)—One sergeant, six patrolmen.

Third District (station at Willow Springs)—One sergeant, six patrolmen.

Fourth District (station at Sag Bridge, Central)—First sergeant, eight patrolmen.

Fifth District (station at Lemont)—One sergeant, seven patrolmen.

Sixth District (station at Romeo)—One sergeant, seven patrolmen.

The First and Sixth Districts each cover a territory of six miles in length, the other four, about four and one-half miles. Eight horses and four wagons are kept by the Department, which have furnished all necessary conveyance for the Department, the officials of the District and a large number of persons who have visited the District for the inspection of the work.

One difficulty which confronts us is that the District has no contracts with the House of Correction; which makes commitment to the County Jail the only mode of punishment for minor offenses or failure to pay fines imposed, as the per diem allowance of prisoners committed in lieu of fines is \$1.50, punishment by commitment becomes almost a farce.

For this reason and a desire to treat all persons who are disposed to work considerately and humanely, no one arrested for a trivial offense such as drunkenness, is arraigned, and the arrest of no person who has not been arraigned is accounted in this report. In cases reported as having been committed to Bridewell the commitment was by Magistrate of villages where offense was committed, authorities having contract therewith.

The following is a summary of the work of the Department:

Total number of arrests.....	922
Total fines imposed.....	\$6,617 25
Committed to County Jail.....	106
Held to Criminal Court.....	85
Committed to Bridewell.....	17
Sent to County Hospital.....	20
Sent to Hospitals other than County.....	16

Dead cared for.....	27
Sick and injured cared for.....	27

(Seven of the dead and five of the injured of the above referred to were taken from railroad tracks or their right of way.)

Number of arrests by months from January 1, 1894 to January 1, 1895:

January.....	56
February.....	10
March.....	27
April.....	49
May.....	80
June.....	99
July.....	130
August.....	102
September.....	145
October.....	75
November.....	77
December.....	72
Total.....	922

For offenses classified as follows:

Assault.....	135
Assault, with deadly weapon.....	26
Assault, with intent to commit rape....	2
Assault, with intent to rob.....	6
Assault, with intent to kill.....	10
Assaulting an officer.....	3
Attempt to commit larceny.....	4
Attempt to commit murder.....	4
Assisting prisoner to escape.....	4
Adultery.....	4
Abduction.....	1
Burglary.....	10
Burglary on railroad cars.....	8
Carrying concealed weapons.....	45
Contempt of court.....	4
Crime against nature.....	2
Criminal assault.....	1
Criminal carelessness.....	2
Cruelty.....	1
Disorderly.....	261
Disorderly on railroad train.....	7
Defrauding an inn-keeper.....	3
Exposing person.....	10
Fugitives from justice.....	5
Gambling.....	7
Horse stealing.....	3
Inmates of house of ill-fame.....	44
Inmates of gambling house.....	20
Interfering with an officer in discharge of duty.....	1
Keeping a gaming house.....	1
Keeping a disorderly house.....	3
Larceny.....	41
Larceny from railroad cars.....	12
Larceny, as bailee.....	2

Murder.....	14
Mayhem.....	14
Malicious mischief.....	4
Nuisance.....	1
Obtaining money under false pretense.....	3
Obtaining goods under false pretense..	2
Passing counterfeit money.....	1
Passing worthless checks.....	1
Rape.....	1
Receiving stolen property.....	3
Resisting an officer.....	13
Robbery.....	39
Selling liquor without license.....	34
Selling liquor on Sunday.....	10
Shooting inside corporate limits.....	9
Threats.....	17
Vagrancy.....	40
Violating game law.....	26
Withholding property.....	1
All other offenses.....	10

Total offenses..... 922

Herewith find an inventory of the property in use by the Department.

Respectfully submitted,

(Signed) EDWARD WILLIAMS,
Marshal."

(Enclosing property return).

RESIGNATION OF ASSISTANT SUPERINTENDENT OF CONSTRUCTION.

The Clerk presented a communication addressed to President Wenter by Mr. D. C. Dunlap, Assistant Superintendent of Construction, tendering his resignation, to take effect January 31, 1895; and the communication was read.

Mr. Kelly, seconded by Mr. Russell, moved that the resignation of Mr. D. C. Dunlap, as Assistant Superintendent of Construction, just read, be accepted.

The motion prevailed unanimously, and it was so ordered.

The following is

THE COMMUNICATION:

"CHICAGO, January 16, 1895.

"Hon. Frank Wenter, President, Board of Trustees.

DEAR SIR—I herewith tender my resignation as Assistant Superintendent of Construction, to take effect January 31, 1895. In doing so, I wish to thank the members for the courtesy shown me during my connection with the District.

Yours truly,

(Signed) D. C. DUNLAP,
Asst. Supt."

ACTION ON REVISED RULES OF ENGINEERING DEPARTMENT.

With reference to the revised rules governing the Engineering Department, presented at the meeting held January 2, 1895 (page 2409 of the Proceedings), and ordered printed, and (under the rules) laid over until the next meeting, action on which was postponed at the meeting held January 9, 1895 (page 2419 of the Proceedings) Mr. Russell presented amendments to rules 40, 42, 46 and 50 thereof; and the amendments were read.

Mr. Russell, seconded by Mr. Cooley, moved that the amendments to the revised rules for the Engineering Department, just presented, be adopted.

On roll-call the vote stood: Yeas—Messrs. Cooley, Eckhart, Kelly, Russell and Wenter—five (5). Nays—None.

Upon which result the President declared the motion carried, and the amendments to the revised rules, just presented, adopted.

Mr. Cooley, seconded by Mr. Kelly, then moved that the revised rules of the Engineering Department, as amended, be adopted.

On roll-call the vote stood: Yeas—Messrs. Cooley, Eckhart, Kelly, Russell and Wenter—five (5). Nays—None.

Upon which result the President declared the motion carried, and the revised rules, as amended, adopted.

The following are

THE AMENDMENTS:

"That the 'Revised Rules,' as presented, be amended as follows:

In Rule No. 40, strike out 'One Assistant Superintendent of Construction, at a salary not exceeding the rate of thirty-six hundred (\$3,600.00) dollars per annum.'

In Rule No. 42, substitute Eight (8) for Seven (7) before the words 'Sub-Assistant Engineers.'

Strike out Rule No. 46, and re-number the remaining rules accordingly.

In Rule No. 50, as reported, strike out the words 'or the Assistant Superintendent of Construction.'

The following are the

REVISED RULES AS AMENDED:

"37. The Chief Engineer shall have

charge of all engineering work and shall devote his time to the Sanitary District. Under his direction, all surveying and civil engineering necessary or ordered by the Board, shall be done, and he shall perform such other duties as may be imposed upon him from time to time by ordinances, orders or resolutions of the Board, and shall attend the meetings of the Board when required. His salary shall not exceed the sum of six thousand (\$6,000) dollars per annum, and his bond shall be in the sum of twenty thousand (\$20,000) dollars.

38. The Chief Engineer shall have entire charge of the work of the Engineering Department, and shall organize and administer the same so as to secure a full record of the nature and cost of all operations, and full responsibility of all employees.

39. The Engineering Department shall consist of three divisions, viz:

Division of Drafting and Designing.

The Assistant Chief Engineer shall have charge of this division. It shall execute all surveys, make and record all maps and plats, file all note books and be custodian of the same; prepare plans and specifications, and perform such other duties as shall be assigned to it by the Chief Engineer.

Division of Construction.

Under the immediate direction of the Superintendent of Construction.

This division shall be charged with the supervision of the practical execution of the contracts in the field to the end that the same may be carried forward promptly, that the required rates of progress may be made and delinquencies or neglect on the part of the contractors may be noted and corrected.

Division of Records.

This division shall be in the direct charge of the Chief Engineer. In it shall be kept all administrative and financial records, and all reports from the several divisions. It shall also be charged with the duty of checking up estimates and returns made to the Chief Engineer by the Superintendent of Construction or any of the Assistant Engineers.

40. The Chief Engineer, by the advice and consent of the Board, shall select the following assistants, as needed by him subject to confirmation by the Board:

One Superintendent of Construction, at a salary not exceeding the rate of five

thousand (\$5,000) dollars per annum, who shall give a bond in the sum of ten thousand (\$10,000) dollars.

One Assistant Chief Engineer, at a salary not exceeding the rate of three thousand six hundred (\$3,600) dollars per annum.

One Principal Assistant Engineer, who shall have the immediate supervision and direction of the Division of Drafting and Designing under the Assistant Chief Engineer, at a salary not exceeding the rate of twenty-seven hundred (\$2,700) dollars per annum.

Assistant Engineers not to exceed six in number, at a salary of eighteen hundred (\$1,800) dollars to twenty-one hundred (\$2,100) dollars per annum. The amount for each Assistant Engineer to be fixed by order of the Board.

41. Of the Assistant Engineers one shall be assigned by the Chief Engineer to serve as resident engineer in charge at each of the respective engineering stations on the line of the work, and the remainder of said Assistant Engineers shall perform such duties as may be assigned to them by the Chief Engineer.

42. The Chief Engineer shall appoint, as authorized by the Board, such employees as the needs of the service may require but shall not exceed the numbers as designated herewith:

	<i>Rate per month.</i>
8 Sub-Assistant Engineers.....	\$125 to \$150 00
12 Instrument men.....	100 to 125 00
10 Sub-Instrument men.....	75 to 100 00
10 Computers.....	75 to 100 00
10 Draftsmen.....	75 to 150 00
10 Rodmen, not to exceed.....	75 00
26 Flagmen, Chairmen and Axmen, not to exceed.....	62 40
1 Clerk to the Superintendent of Construction.....	75 00
Laborers, not to exceed.....	54 00
1 Messenger.....	40 00

Sub-Assistant Engineers, Instrument men, Sub-Instrument men and Draftsmen shall be men of technical competence and training for the duties assigned them.

All appointments, changes of grade and fixing of pay is to be done with the concurrence of the President and Committee on Engineering.

43. The Chief Engineer may employ a Record Clerk at a salary not exceeding fifteen hundred (\$1,500) dollars per annum, and a typewriter at the rate of not over seventy-five (\$75) dollars per month.

44. The Assistant Chief Engineer shall

be Acting Chief Engineer in the absence of the Chief Engineer and by his authority, or when authorized by the Board.

45. The Superintendent of Construction shall have charge of the Division of Construction and shall perform such other duties as may be assigned to him by the Chief Engineer. He shall see that all contracts entered into by the District with various parties are efficiently carried out and he shall make a report to the Chief Engineer at least once in each month, giving in detail the condition of the work in process of construction by the District, the progress made therein, and the manner in which the same is being executed. A copy of the report shall be transmitted to the Board by the Chief Engineer, with such recommendations as the Chief Engineer considers proper to make relative thereto.

46. For any special service of limited duration and for which the regular force is not available, employes are to be had by requisition on the Board, and any such requisitions shall state the number, grade, rate of compensation and duration of service required. All such employment shall be designated "Special," and returned on separate vouchers or payrolls.

47. All changes of plans whatsoever, by which any work is to be carried out in any manner different from that provided for in any contracts, shall be determined upon and authorized by the Board, and proper specifications and plans therefor shall be filed for record with the Clerk, and the President shall issue notice attested by the Clerk, to the parties in interest.

48. Before authorizing or allowing any extra work or fixing any price therefor or directing or passing upon any work not specifically described and provided for in any contracts, the Chief Engineer shall submit all matters in relation thereto to the Board or its duly authorized committees, sitting in an administrative capacity.

49. All current estimates of the work done under any contract, and the certificates therefor, shall be made by the respective resident Engineers, and the same shall be certified by the Superintendent of Construction, and approved by the Chief Engineer.

50. Whenever the Chief Engineer shall give to the resident Engineers any order or instruction pertaining to the work of construction, a copy of the same shall at the same time be delivered to the Superintendent of Construction.

51. The employes confirmed by the Board shall at all times be subject to call before the Board and its authorized committees, and it is made part of their duty to fully advise the Board through the President or said committees, of any matters of administration or engineering which may be for the good of the District, when requested so to do.

52. The Chief Engineer shall, at stated intervals, when the needs of the service require it, examine or cause to be examined by Assistant Engineers, selected by him for that purpose, any applicants for positions in the Engineering Department, where previous technical training is necessary.

No applicant shall receive an appointment unless the Chief Engineer shall be satisfied from such examination that he is fully qualified for the position sought and other things being equal those who are citizens and residents of Cook County shall be given the preference in making such appointments. The tenure of position of new appointees shall be provisional until their fitness is practically demonstrated.

Promotion in the regular force shall also be made from those who have passed an examination directed by the Chief Engineer for determining the qualifications of candidates for the place or places to be filled; but the Chief Engineer in making such promotions shall consider the efficiency of the candidate, as shown by his previous work in the department, in connection with the result of such examination.

Whenever, in the opinion of the Chief Engineer, a reduction of the force may be made consistently with the best interests of the District, he shall so report to the Board.

The Chief Engineer shall have the right of summary discharge for insubordination, or conduct unbecoming an employe of the Sanitary District.

The merit system shall control all appointments and promotions in said Engineering Department."

TIME WHEN REVISED RULES ARE TO GO INTO EFFECT.

Mr. Cooley, seconded by Mr. Kelly, moved that the Chief Engineer be allowed such time as he deems necessary for putting the revised rules governing the Engineering Department into effect, such time not to exceed ten (10) days from this date.

The motion prevailed unanimously, and it was so ordered.

WITHDRAWAL OF BID OF F. C. WEIR ON
SECTION F.

The Clerk presented a communication from F. C. Weir, asking permission to withdraw his bid for the completion of the work on Section F, presented at the meeting held January 9, 1895 (page 2419 of the Proceedings); and the communication was read.

Mr. Cooley, seconded by Mr. Kelly, moved that the communication be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the communication was ordered printed and so referred.

The following is

THE COMMUNICATION:

"CHICAGO, January 12th, 1895.

Honorable Board Sanitary District of Chicago:

GENTLEMEN—Referring to my proposal for the completion of the work on Section F, dated January 9th, 1895, and to your communication of the 11th inst:

I beg to state from the press reports, I anticipated your formal notice and concluded, inasmuch as I was relying on my Engineer's report of said Section F, that I

would inspect the work in person before entering upon a definite obligation for its performance. I leave you to imagine my astonishment to find the material to be thus excavated, is of a much different character than I was led to infer from his report.

I regret to state that I cannot concur in his views; that his judgment is erroneous, in my opinion, there can be no doubt, and have concluded it is much better to correct the error now than later on.

I fully appreciate the importance and magnitude of your grand undertaking, and the necessary quintessence of time, which, to my mind, is the all essential to your Honorable Board; therefore, for the interest of all concerned, I fully believe it is wise to withdraw my proposition for the reasons herein stated.

Wishing you a continued success, etc., of this important work,

Very respectfully yours,

(Signed) F. C. WEIR."

ADJOURNMENT.

On motion of Mr. Eckhart, seconded by Mr. Kelly, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS

—OF THE—

BOARD OF TRUSTEES

—OF THE—

SANITARY DISTRICT OF CHICAGO.

JANUARY 23, 1895.

OFFICIAL RECORD.

(Published by authority of the Board of Trustees of the Sanitary District of Chicago.)

REGULAR MEETING.

The two hundred and fifty-seventh regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, January 23, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Boldenweck, Eckhart, Kelly, Russell and Wenter—five (5) members, were present.

MINUTES.

The minutes of the regular meeting held January 16, 1895, were approved as printed, on motion of Mr. Kelly, seconded by Mr. Boldenweck.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

Construction Account—

Griffiths & McDermott	
(Sec. 1, Jan. 16, 1895).	\$ 9 250 00
McArthur Bros. (Sec. 2, Jan. 16, 1895).....	14,716 23
Gilman & Co. (Sec. 3, Jan. 16, 1895).....	16,324 00
McArthur Bros. (Sec. 4, Jan. 16, 1895).....	11,164 37
The Qualey Construction Co. (Sec. 5, Jan. 16, 1895).....	3,854 38
Mason, Hoge & Co. (Sec. 6, Jan. 16, 1895)	9,253 12
Mason, Hoge & Co. (Sec. 7, Jan. 16, 1895)	5,402 25
Mason, Hoge, King & Co. (Sec. 8, Jan. 16, 1895).....	14,258 56
Halvorson, Richards & Co. (Sec. 9, Jan. 16, 1895).....	16,216 29

E. D. Smith & Co. (Sec. 10, Jan. 16, 1895).....	\$ 13,020 00
Mason, Hoge & Co. (Sec. 11, Jan. 16, 1895).....	7,558 47
Mason, Hoge & Co. (Sec. 12, Jan. 16, 1895).....	16,503 81
Mason, Hoge & Co., (Sec. 13, Jan. 16, 1895).....	6,148 19
Smith & Eastman (Sec. 14, Jan. 16, 1895)....	11,689 12
Wright, Meysenburg, Sinclair & Carry (Sec. 15, Jan. 16, 1895).....	1,910 12
Heldmaier & Neu (Sec. A, Jan. 16, 1895).....	2,701 12
Heldmaier & Neu (Sec. B, Jan. 16, 1895).....	3,359 48
Western Dredging & Improvement Co. (Sec. C, Jan. 16, 1895).....	4,210 38
E. D. Smith & Co. (Sec. D, Jan. 16, 1895).....	4,887 50
Angus & Gindele (Sec. E, Jan. 16, 1895).....	2,315 98
Gahan & Byrne (Sec. G, Jan. 16, 1895).....	3,940 83
Gahan & Byrne (Sec. H, Jan. 16, 1895).....	583 63
Christie & Lowe. (Sec. I, Jan. 16, 1895).....	6,170 94
Christie & Lowe. (Sec. K, Jan. 16, 1895).....	4,488 75
The Heidenreich Co. (Sec. L, Jan. 16, 1895).....	5,979 69
The Heidenreich Co. (Sec. M, Jan. 16, 1895).....	3,774 71
Mason, Hoge & Co., (Sec. 6, extra—special work, retaining embankment and repairing and raising levee, Jan. 16, 1895)....	230 00
Heldmaier & Neu, (Sec. A, extra work—completing Levee 692 to 710 and below 710, Jan. 16, 1895).....	1,062 00
	<u>\$200,973 90</u>

LAW DEPARTMENT.

Geo. E. Dawson, (expense).....	\$ 85 20
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GENERAL ACCOUNT.

The Chicago Deposit Vault Company (rent, Rialto building, November to January, 1895).....	\$ 1,875 00
Chicago Edison Company (electric lighting).....	80 27
The Chicago Times, (advertising Sec. F and bonds).....	30 63
The Mail (advertising Sec. F and bonds)....	35 00
Der Republikaner (advertising Sec. F and bonds).....	22 50
The Economist Publishing Company (advertising bonds).....	27 00
	<u>\$ 2,070 40</u>

POLICE DEPARTMENT.

Thomas F. Judge (freight on oats)....	\$ 43 60
Grand total.....	<u>\$203,173 10</u>

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Eckhart, Kelly, Russell and Wenter—five (5). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

REQUISITIONS.

The Clerk presented the following requisitions:

No. 488, Law Department, (stationery).....	\$ 37 90
No. 518, Engineering Department, (sundries).....	411 70
No. 519, Engineering Department, (sundries)	274 55
No. 934, Police Department, (oil)	10 00
No. 1062, Clerical Department, (stationery)	63 25
Total.....	<u>\$797 40</u>

Mr. Boldenweck, seconded by Mr. Eckhart, moved that Requisitions Nos. 518 and 519, for the Engineering Department, as read and shown above, be referred to the Joint Committee on Engineering and Finance, and Requisitions No. 488, for the Law Department, No. 934, for the Police Department, and No. 1062, for the Clerical Department, as read and shown above, be allowed.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Eckhart, Kelly, Russell and Wenter—five (5). Nays—None.

Upon which result the President declared the motion carried, and Requisitions Nos. 518 and 519, for the Engineering Department, as read and shown above, referred to the Joint Committee on Engineering and Finance, and Requisitions No. 488, for the Law Department, No. 934, for the Police Department, and No. 1062, for the Clerical Department, as read and shown above, allowed.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the

number of persons in the employ of the District for the week ending January 19, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, Jan. 23, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending January 19, 1895, as the same have been reported to me:

Engineering Department.....	135
Clerical Department.....	4
Law Department.....	7
Treasury Department.....	1
Police Department.....	48
Telephone operator.....	1

Total employes..... 196

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

AWARDING OF CONTRACT FOR COMPLETION OF WORK ON SECTION F OF MAIN CHANNEL.

Mr. Eckhart, for the Joint Committee on Engineering and Finance, presented a report from that Committee, recommending the awarding of the contract for the completion of the excavation of Section F of the Main Channel to F. C. Weir, the lowest bidder of January 9, 1895, as provided in the report, and further recommending that the Clerk return the checks deposited by each and all of the other bidders with their bids; and the report was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed and placed on file, the recommendations made therein concurred in, and the Clerk directed to return to each and all of the bidders, with the exception of F. C. Wier, the checks deposited with their bids.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Eckhart, Kelly, Russell and Wenter—five (5). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on

file, the recommendations made therein concurred in, and the Clerk directed to return to each and all of the bidders on Section F, with the exception of F. C. Weir, the checks deposited with their bids.

The following is

THE REPORT:

"CHICAGO, Jan. 16th, 1895.

To the Honorable Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The Joint Committee on Engineering and Finance, to whom was referred the bids for the work of completing Section "F" of the Main Channel, report that the bid of F. C. Weir is the lowest for said work.

Your Committee therefore recommend that the work of completing said Section "F" be awarded to said F. C. Weir at his bid of twenty-nine and one-half (29½) cents for glacial drift and ninety (90) cents for solid rock; and that the Clerk be directed to notify him of such award, and also that he appear within five (5) days after service of such notice, execute the contract for the work so awarded, and give a bond, satisfactory to your Honorable Body, in the sum of one hundred thousand (\$100,000.00) dollars, for the fulfillment of the same, as provided in the advertisement for proposals, and in the proposal of said F. C. Weir for said work.

We further recommend that the checks deposited by the other bidders with their respective bids be returned to them.

Respectfully submitted,

(Signed) B. A. ECKHART,
W. H. RUSSELL,
WM. BOLDENWECK,
THOMAS KELLY,

Joint Committee on Engineering and Finance."

PURCHASE OF "FITZPATRICK" LAND.

Mr. Eckhart, Chairman, presented a report from the Joint Committee on Finance and Engineering, with reference to the purchase from Mary Fitzpatrick, Fanny Fitzpatrick, Michael Fitzpatrick, Kate Fitzpatrick and Mary Kelly, all the heirs of Patrick Fitzpatrick, deceased, of certain right of way lands in Will County, and authorizing and directing the Clerk to pay for the said right of way lands, on the voucher of the Attorney, as provided in the report; and the report was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed placed on file, the recommendations made therein concurred in, and the Clerk authorized and directed to pay Mary Fitzpatrick, Fanny Fitzpatrick, Michael Fitzpatrick, Kate Fitzpatrick and Mary Kelly, all the heirs of Patrick Fitzpatrick, deceased, on the voucher of the Attorney for the said right of way lands, as provided in the report.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Eckhart, Kelly, Russell and Wenter—five (5). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, the recommendations made therein concurred in, and the Clerk authorized and directed to pay Mary Fitzpatrick, Fannie Fitzpatrick, Michael Fitzpatrick, Kate Fitzpatrick and Mary Kelly, all the heirs of Patrick Fitzpatrick, deceased, on the voucher of the Attorney, for the said right of way lands, as provided in the report.

The following is

THE REPORT:

“CHICAGO, January 23, 1895.

To the Honorable, the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The Joint Committee on Finance and Engineering have reached an agreement with Mary Fitzpatrick, Fanny Fitzpatrick, Michael Fitzpatrick, Kate Fitzpatrick, and Mary Kelly, they being all the heirs of Patrick Fitzpatrick, deceased, for the purchase from them, for the corporate purposes of this District, of the land hereinafter described for the sum of three hundred and fifty, seven (\$357.00) dollars.

Your Committee recommend that the Clerk of this District be authorized and directed to pay, on the voucher of the Attorney, to said Mary Fitzpatrick, Fanny Fitzpatrick, Michael Fitzpatrick, Kate Fitzpatrick, and Mary Kelly, the sum of three hundred and fifty-seven (\$357.00) dollars, in full payment for the following described lands and property, to-wit:

That part of the southeast quarter (S. E. $\frac{1}{4}$) of Section fifteen (15), Township thirty-six (36) north, Range ten (10), East of the Third Principal Meridian, bounded and described as follows:

Beginning at a point on the south (S.) line of said Section, nine hundred and one and twenty-three one-hundredths (901.23) feet west (W.) of the south-east (S. E.) corner thereof, and running thence north (N.) 11 degrees and forty-seven minutes east (E.), six and nine and one-fourth one-hundredths ($6.09\frac{1}{4}$) chains; thence north (N.) 10 degrees and 55 minutes west (W.) seven and sixty-one and one-half one-hundredths ($7.61\frac{1}{2}$) chains; thence north (N.) 51 degrees and 58 minutes west (W.), one hundred and seven (107) feet; thence south (S.) 4 degrees and 46 minutes and 13 seconds west (W.), to a point on the south (S.) line of said section one thousand and seventy-one and twenty-three one-hundredths (1,071.23) feet west (W.) of the southeast (S. E.) corner thereof; thence east (E.) on said south (S.) line one hundred and seventy (170) feet, to the point of beginning;

All of said above described lands and property lying and being situate in the County of Will, in the State of Illinois.

Respectfully submitted,

(Signed) B. A. ECKHART,
Chairman.

W. H. RUSSELL,
WM. BOLDENWECK,
THOMAS KELLY,

Joint Committee on Finance and Engineering.”

COMMUNICATION FROM JOHN M'KECHNEY & CO.

The Clerk presented a communication from John McKechney & Co., with reference to their bid for the completion of the work on Section F of the Main Channel, submitted at the meeting held January 9, 1895; and the communication was read.

Mr. Kelly, seconded by Mr. Eckhart, moved that the communication be ordered placed on file without being printed.

The motion prevailed unanimously, and it was so ordered.

ADJOURNMENT.

On motion of Mr. Kelly, seconded by Mr. Eckhart, the Board then adjourned.

THOS. F. JUDGE,
Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

JANUARY 30, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and fifty-eighth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, January 30, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter — six (6), and subsequently Messrs. Gilmore and Prendergast, making a total of eight (8) members, were present.

MINUTES.

The minutes of the regular meeting

held January 23, 1895, were approved as printed, on motion of Mr. Kelly, seconded by Mr. Boldenweck.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending January 26, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, Jan. 30, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending Janu-

ary 26, 1895, as the same have been reported to me:

Engineering Department.....	132
Clerical Department.....	4
Law Department.....	7
Treasury Department.....	1
Police Department.....	48
Telephone operator.....	1

Total employees..... 193

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

MONTHLY REPORT FROM ENGINEERING DEPARTMENT.

The Clerk presented a report from the Engineering Department (accompanied by classified statement) for the month of December, 1894.

The same was read, and, by unanimous consent, was ordered printed, and, with accompanying classified statement, placed on file.

The following is

THE REPORT:

"CHICAGO, Jan. 29, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I herewith transmit the reports of Divisions 1, 2 and 3, showing the detailed operations of the Engineering Department for the month of December, 1894.

The expenses for the month of December were as follows:

Pay rolls.....	\$ 12,392.91
Material, etc.....	1,507.66
Contractor's estimates.....	762,186.31

Total.....\$776,086.88

The items representing the amount of contractors' estimates includes three sets of vouchers.

I estimate the expenses of this Department for the month of January will be \$475,000.00.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

(Accompanied by classified statement.)

"CHICAGO, Jan. 28, 1895.

Isham Randolph, Esq. Chief Engineer:

DEAR SIR—I herewith present to you

my report of the work of construction for the month of December, 1894, together with the usual tabulated statements. I also give in this report a summary of the excavation done in the Main Channel of each section, showing the number of cubic yards excavated prior to 1894, the number of cubic yards excavated during the year 1894, and the total quantity excavated up to January 1st, 1895. In this summary I have omitted all River Diversion, Levee and Collateral work, in order to show the exact standing of the Main Channel excavation upon a quantity, or yardage basis, which gives the actual proportional part of Main Channel work done. This proportion I have expressed in percentages, showing the percentage of excavation required and the percentage done. Comparing the percentages upon this basis with those based upon value (or a money basis), it will be noted that there is much less disparity between the work required and the work done, under the former than under the latter method, especially upon those sections that contain both glacial drift and solid rock in nearly equal quantities. The exhibit of yardage progress made on most of the sections, many of which were largely delinquent, demonstrates conclusively that, with proper effort, every section may be completed within contract time.

Upon the foregoing basis the condition of the sections in detail is as follows:

SECTIONS O AND N.

But little work was done on these sections during the month. About 10,421 cubic yards of material were excavated with steam dredges in the Basin and Main Channel on Section O, between Robey street and Western Avenue boulevard.

On the 27th work was suspended for the winter. The contractors have prepared ways for the removal of their dredges and barges from the Channel, and intend to overhaul and repair their plant during the idle season.

The following is a summary of the amount of work done on Section O during the year:

	<i>Cubic Yds.</i>
Total quantity Main Channel and Basin...	1,516,734
May estimate (commenced work in April)	30,800
June estimate.....	100,400

July estimate.....	92,200	
August estimate.....	96,000	
September estimate....	61,000	
October estimate.....	78,000	
November estimate....	50,000	
December estimate....	10,421	
Total amount excavated.....		518,821
Balance remaining...		997,913

Percentage of excavation required.... 33.3
 Percentage of excavation done..... 34.2

No further work will be done on this section until the opening of navigation in the spring.

Work on the Collateral Channel was continued with teams and wheel scrapers. The greater part of the material was taken away in railroad cars and the balance used in filling clay pits east of the right-of-way, near the river. The total output for the month was 7,600 cubic yards.

On Section N work was carried on with a team wheel-scraper outfit, loading material on railroad cars until December 15th, when work was suspended for the winter. The output for the month was 4,000 cubic yards.

The condition of the section on the 1st inst. is as follows:

	<i>Cubic Yds.</i>
Total quantities in Main Channel.....	1,113,843
August estimate (commenced in July)....	20,500
September estimate....	22,200
October estimate.....	17,200
November estimate....	7,400
December estimate....	4,000
Total amount excavated to Jan. 1, 1895.	71,300
Balance remaining...	1,042,543

Percentage of excavation required.... 33.3
 Percentage of excavation done..... 6.4

SECTIONS M AND L.

Four steam shovels, in connection with incline conveyors, worked on these sections all the month. Two of these shovels were operated on Section M up to December 4th, since which time one worked on Section M and three on Section L. One shovel on each section was employed two shifts per day.

Three thousand eight hundred and six

cubic yards were removed at the east end of Section M, with small dump cars loaded by manual labor.

Ninety-three thousand six hundred and ninety-four cubic yards were excavated by steam shovels on both sections, an average of 808 yards per shift, for the time actually worked (116 shifts), and of a little more than 600 yards per shift for the full number of working shifts (156). The loss of forty shifts was occasioned by breaking of machinery, turning shovels around, changing length of incline when starting a new cut, etc. Considerable of this time was lost by the freezing of the city water mains, east of their work, with which their water system is connected, thus cutting off their supply for a time. The condition of the work on these sections is as follows:

	<i>Cubic Yds.</i>
Total quantities in Main Channel.....	722,850
March estimate.....	1,000
April estimate.....	5,300
May estimate.....	20,000
June estimate.....	42,500
July estimate.....	43,000
August estimate.....	29,900
September estimate....	55,500
October estimate.....	68,400
November estimate....	47,300
December estimate....	30,900
Total amount excavated to Jan. 1, 1895.....	343,800
Balance remaining....	379,050

Percentage of excavation required.... 36
 Percentage of excavation done..... 47.5

	<i>Cubic Yds.</i>
Total quantities in Main Channel.....	1,101,881
March estimate.....	1,800
April estimate.....	21,400
May estimate.....	47,900
June estimate.....	76,200
July estimate.....	77,400
August estimate.....	63,300
September estimate....	29,800
October estimate.....	27,900
November estimate....	45,800
December estimate....	66,600
Total amount excavated to Jan. 1, 1895.....	458,100
Balance remaining....	643,781

Percentage of excavation required....	36
Percentage of excavation done.....	41.5

SECTIONS K AND I.

On these sections nearly all work was done with four steam shovels in connection with truss bridge conveyors. On Section K two shovels were operated in two ten-hour shifts per day until December 17th, after which date only one shovel was worked nights. On Section I two shovels were employed in two ten-hour shifts per day until December 12th, after which date but one shovel was engaged nights.

An average of eight scraper teams were used in trimming down the side slopes, except seven days, when some scraper work was done at the west end of Section I. The total amount moved to the spoil banks by this force was 1,095 cubic yards.

One hundred and nine thousand eight hundred and five cubic yards were excavated with steam shovels in the 153 shifts worked, making an average of 695 yards per shift. Fifteen ten-hour shifts were lost in making repairs to machinery and boilers and inadequate water supply, which gives the average output per shift 635 yards for each shovel for the whole number (173) of possible working shifts during the month.

The following shows the condition of the work on these sections up to the 1st inst.:

	<i>Section K.</i>	<i>Cubic Yds.</i>
Total yardage in Main Channel.....		1,155,957
April estimate.....	3,700	
May estimate.....	17,500	
June estimate.....	64,300	
July estimate.....	91,300	
August estimate.....	60,100	
September estimate....	58,400	
October estimate.....	32,300	
November estimate....	33 000	
December estimate.....	54,000	
Total amount excavated to Jan. 1, 1895		414,600
Balance remaining...		741,357

Percentage of excavation required....	36
Percentage of excavation done.....	35.9

Section I.

	<i>Cubic Yds.</i>
Total yardage in Main Channel.....	1,139,849
January estimate.....	3,874
April estimate.....	24,726

May estimate.....	65,000
June estimate.....	133,800
July estimate.....	50 800
August estimate.....	111,400
September estimate....	64,300
October estimate.....	79,500
November estimate.....	90,100
December estimate.....	56,900

Total amount excavated to Jan. 1, 1895	680,400
Balance remaining...	459,449

Percentage of excavation required....	36
Percentage of excavation done.....	59.7

SECTIONS H AND G.

On Section H a small team force was employed on miscellaneous work and an average force of about six men was engaged in repairing the Hoover & Mason conveyor. The steam shovel and dump cars mentioned in my last report commenced work on December 8th in the triangular pit along-side the Santa Fe Railway. Five thousand and fifteen cubic yards were excavated in eighteen and five-tenths days—an average of 271 cubic yards per day. This low average is largely due to the irregular shape of the pit in which a suitable opening for shovel work was difficult to make.

The condition of the work on this section at the end of the year is as follows:

Total yardage in Main Channel.....	1,077,032
July estimate.....	37,136
August estimate.....	31,934
September estimate.....	37,410
October estimate.....	19 771
November estimate.....	10,178
December estimate.....	5,015
Total amount excavated to Jan. 1, 1895.....	141,444
Balance remaining.....	935 588

Percentage of excavation required....	36
Percentage of excavation done.....	13.1

On Section G work was continued in the same manner as during the previous months. The steam shovel at the east end of the section worked forty shifts of ten hours each, making an excellent average of 84½ yards per shift.

On the 14th a trench excavator was started on the north side of the Channel.

While its capacity is probably much less than a regular steam shovel, it seems to be much better adapted for taking down slopes and opening pits. It is built somewhat similar to the steam shovel, but is set up higher on a timber frame that rests on skids or runners, instead of wheels. This excavator handled 2,484 cubic yards in twelve days, an average of 207 yards per day.

Time lost in making repairs, rain and one holiday, reduced the working time of the belt conveyor to twenty days, during which period it moved 6,260 cubic yards, an average of 313 yards per day worked.

The condition of the work at the end of the year is as follows:

Total yardage in Main Channel.....		Cubic Yds.
March estimate.....	34,164	
April estimate.....	17,826	
May estimate.....	38,015	
June estimate.....	102,979	
July estimate.....	101,718	
August estimate.....	73,350	
September estimate.....	30,944	
October estimate.....	45,130	
November estimate.....	41,376	
December estimate.....	42,404	

Total amount excavated to Jan. 1, 1895..... 527,906

Balance remaining..... 836,169

Percentage of excavation required.... 36
Percentage of excavation done..... 38.7

SECTION F.

No excavation was done on this section during the month. On the 14th of December a force consisting of one pumpman, three laborers and one team rigged up a Pulsometer pump and hauled some coal. Pumping was then commenced and continued until noon of the 20th when all work was abandoned.

The condition of the work at the end of the year is as follows:

Total yardage in Main Channel—

		Cu. Yds.
Glacial drift.....	1,093,353	
Solid rock.....	16,724	
	1,110,077	

Jan. 1, 1894, amount done to date..... 246,543

Estimate—

January..... 18,241

February.....	17,272
March.....	17,528
April.....	17,075
May.....	51,718
June.....	40,598
July.....	24,915
August.....	38,583
September.....	9,025
October.....	21,650
November.....	1,147

Total amount excavated during 1894..... 857,750

Total amount excavated to Jan. 1, 95..... 504,293

Balance remaining..... 605,784

Percentage of excavation required.... 54.5
Percentage of excavation done..... 45.4

NOTE—The above statement is for the Main Channel only, and does not consider River Diversion, Levee and other collateral work which is practically completed.

SECTION E.

The levee has been completed on this section with the exception of a few feet at the west end where it joins the Calumet Terminal Railway embankment. At this point it is not quite up to the standard height, but further filling is being continued. The plant employed on this section is as follows:

- 2 Steam shovels.
- 4 Locomotives.
- 40 Large dump carts.
- 6 Flat cars.
- 4 Steam pumps.
- 1 Dynamo.

One steam shovel worked day and night, and the other during the day only. Six days were lost making repairs, three days on account of righting a derailed shovel and two days for holidays. The output for the month was 30,696 cubic yards in which the steam shovels averaged 403 yards per day. The average monthly requirement in yardage from October 1st was 79,070 cubic yards per month. The average monthly output under the present contract (from October 1st) is but 16,406 cubic yards. To overcome this deficiency, and complete the contract on time now requires an average monthly output of 91,603 yards.

The condition of the section at the end of the year is as follows:

Total yardage in Main Channel—		<i>Cu. Yds</i>
Glacial Drift.....	1,813,659	
Solid Rock.....	78,765	
	<hr/>	1,892,424
Jan. 1, 1894, amount done to date (Streeter & Kenefick).....	462,402	
<i>Estimate—</i>		
January, Streeter & Kenefick	6,761	
(September 19, work let to Angus & Gindele.)		
October, Angus & Gindele	00	
November, Angus & Gindele	18,523	
December, Angus & Gindele	30,696	
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Total amount excavated to Jan. 1, 1895.....	518,382	
Balance remaining...	1,374,042	
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Percentage of excavation required (Angus & Gindele contract).....	16.7
On entire Main Channel.....	37.3
Percentage of excavation done (Angus & Gindele contract).....	3.5
On entire Main Channel.....	27.5

SECTION D.

The third steam shovel was started on the 1st inst., the material from which was hauled away with wagons drawn by three horses. This shovel worked about twenty days, averaging about 504 yards per day. The other two shovels continued work in the usual manner, losing about nine days on account of repairing, moving, holidays, etc. The average output for these two shovels was 823 cubic yards each per day.

On the 10th of December the east shovel encountered solid rock near Station 513, and on the 18th the west shovel was found to be working on solid rock at about Station 547.

The condition of the work at the end of the year on this section is as follows:

Total yardage in Main Channel—		<i>Cu. Yds.</i>
Glacial Drift.....	1,877,721	
Solid Rock.....	137,694	
	<hr/>	2,015,415
Jan. 1, 1894, amount done to date.....	227,317	

Estimate—

January.....	32,512
February.....	43,964
March.....	66,153
April.....	124,660
May.....	118,093
June.....	103,497
July.....	81,697
August.....	109,151
September.....	93,912
October.....	47,398
November.....	21,827
December	47,691

Total amount excavated during 1894	890,555
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Total amount excavated to Jan. 1, '95	1,117,872
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Balance remaining.	897,543
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Percentage of excavation required....	54.5
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Percentage of excavation done.....	55.4
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SECTION C.

This section makes a very creditable showing for the month. The yardage moved for the month amounted to 66,578 cubic yards and was done by two steam shovels and the various wheel scraper, dump car and wheelbarrow forces. The latter appliances were considerably reduced toward the end of the month owing to inclement weather. The two steam shovels averaged 538 yards each for the days worked.

The condition of this section at the end of the month is as follows:

Total yardage in Main Channel...		<i>Cu. Yds.</i>
Jan. 1, 1894, No. of yds. excavated to date.....	135,828	

Estimate—

January.....	17,319
February..	17,866
March.....	24,109
April.....	59,311
May.....	50,666
June.....	73,626
July.....	60,725
August.....	71,029
September.....	53,313
October.....	83,677
November	78,940

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December.....	66,578
Total amount excavated during 1894	657,159
Total amount excavated to Jan. 1, '95	792,987
Balance remaining	1,094,768
Percentage of excavation required....	54.5
Percentage of excavation done.....	42

NOTE—River Diversion and levee not included.

SECTIONS B AND A.

Fifty-one thousand cubic yards of material were excavated on Section B during the month, of which 3,180 yards were taken out with the hydraulic dredge in thirteen shifts, averaging about 245 yards per shift. This work was done in cleaning up some low places, which accounts for the small average. The steam shovels moved 21,500 yards in eighty-seven shifts, an average of 247 yards per shift. The remainder 26,320 yards were moved with wheel scrapers, wheel barrows, etc.

The condition of this section at the end of the year is as follows:

Total yardage in	<i>Cu. Yds.</i>
Main Channel...	1,576,828
<i>Estimate—</i>	
March.....	16,200
April.....	37,920
May.....	158,554
June.....	118,789
July.....	185,831
October.....	6,027
November.....	26,151
December.....	51,914

Total amount excavated to Jan. 1, '95	600,477
Balance remaining	976,351

Percentage of excavation required....	54.5
Percentage of excavation done.....	38.0

On Section A the hydraulic dredge and one dipper finished the muck excavation, removing about 22,400 cubic yards in nineteen shifts, an average of 1,180 yards per shift.

In the River Diversion Levee, opposite this section, 12,900 yards of material were hauled from the Main Channel of Section B, and 18,700 yards from the Main Channel

of Section 1, which nearly filled the trestle. At this writing the levee is up to grade, and is undoubtedly able to withstand the strongest floods.

The condition of this section at the close of the year was as follows:

Total yardage in	<i>Cu. Yds.</i>
Main Channel...	2,580,696
Jan. 1, 1894, No. of yds. excavated to date	90,859

Estimate—

January.....	13,012
March.....	75,464
April.....	164,414
May.....	6,805
June.....	32,000
July.....	30,888
August.....	133,943
September.....	154,857
October.....	97,180
November.....	37,500
December.....	22,400

Total No. of yds. excavated during 1894.....	768,463
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Total amount excavated to Jan. 1, '95	859,322
Balance remaining.	1,721,374

Percentage of excavation required....	54.5
Percentage of excavation done.....	33.3

NOTE—River Diversion and levee not included.

SECTION NO. 1.

Seventy-one thousand seven hundred cubic yards of material were excavated on Section 1, mostly with four special pattern steam shovels. Shovel No. 177 worked twenty-eight shifts, excavating 13,100 yards, an average of 468 yards per day.

Shovel No. 179 worked twenty-nine shifts, taking out 13,600 yards, an average of 469 yards.

Shovel No. 181 worked thirty-six shifts, moving 17,700 yards, an average of 492 yards.

Shovel No. 185 worked forty-five shifts, handling 24,200 yards, an average of 537 yards per day.

The balance, 3,100 yards, was moved with wheel scrapers and small cars.

The condition of the work at the close of the year was as follows:

Total yardage in Main Channel...	1,709,775
Jan. 1, 1894, amount done to date.....	99,332
<i>Estimate—</i>	
January, (A. Harlev).....	8,268
March, (Heldmaier & Neu).....	7,790
April, (Heldmaier & Neu).....	4,136
July, (Griffiths & McDermott)....	5,300
August, (Griffiths & McDermott)....	57,000
September, (Griffiths & McDermott).....	50,600
October, (Griffiths & McDermott)...	66,600
November, (Griffiths & McDermott).....	50,500
December, (Griffiths & McDermott).....	71,700
A. Harlev.....	1,940
Total amount excavated during 1894	323,884
Total amount excavated to Jan. 1, '95	423,166
Balance remaining	1,286,609
Percentage of excavation required....	33.7
Percentage of excavation done.....	24.7

SECTION NO. 2.

Work on this section embraced excavation in glacial drift and solid rock. The former was handled with three steam shovels and one cable way, and the latter mostly with one cable way. Thirty-six thousand cubic yards of glacial drift were excavated with three steam shovels in seventy-six shifts, which is an average of about 473 yards each per shift. One cable way averaged 295 yards per shift for thirty-seven shifts, equal to 10,934 yards, making the total output 46,934 cubic yards.

The output of solid rock was 17,642 yards, of which one cable way took out 14,300 yards, averaging about 377 yards per shift for thirty-eight shifts. The remaining 3,342 yards were moved with small cars.

The condition of the section at the end of the season was as follows:

Total yardage in Main Channel...	1,102,613
Jan. 1, 1894, amount done to date.....	91,000
<i>Estimate—</i>	
January.....	36,200
February.....	44,200
March.....	29,800
April.....	55,700
May.....	33,375
June.....	31,664
July.....	43,224
August.....	45,078
September.....	39,529
October.....	41,063
November.....	53,355
December.....	64,576
Total amount excavated during 1894	517,769
Total amount excavated to Jan. 1, '95	608,769
Balance remaining.	493,844

Percentage of excavation required.... 56.1
Percentage of excavation done..... 55.3

NOTE—River Diversion, levee, etc., not included.

SECTION NO. 3.

Fourteen thousand six hundred and seventy-eight cubic yards of glacial drift, and 42,763 yards of solid rock were moved on this section during the month. Of the former 9,800 yards were taken out with a steam shovel in twenty-five days, averaging 392 yards per day, and 4,878 yards were handled with small cars.

The solid rock was moved with four cable ways in 140 ten-hour shifts, which is equal to an average of 305 yards per shift for each cable way.

The condition of the section at the end of the year was as follows:

	<i>Cubic Yds.</i>
Total yardage in Main Channel...	1,181,982
Jan. 1, 1894, amount done to date.....	94,510
<i>Estimate—</i>	
January.....	35,000
February.....	20,000
March.....	33,900
April.....	19,400
May.....	17,800
June.....	28,465

July.....	29,182
August.....	51,864
September.....	56,191
October.....	61,182
November.....	46,705
December.....	57,441

Total yardage excavated during 1894 457,130

Total yardage excavated to Jan. 1, '95 551,640

Balance remaining. 630,342

Percentage of excavation required.... 49.8

Percentage of excavation done..... 46.6

SECTION NO. 4.

There were excavated on this section during the month of December 54,679 yards of glacial drift and 6,491 yards of solid rock. Four steam shovels worked on the glacial drift, averaging 471 cubic yards each per day for the 116 working days covered by the estimate.

Five thousand six hundred cubic yards of the rock were moved by two cable ways that worked thirty-eight shifts, giving an average of 147 yards each per shift, and 891 yards were hauled out with small cars. The small daily average on the rock work is largely due to the difficulties encountered in opening up the pits, this being the first rock estimate on the section.

The condition of the section at the end of the year is as follows:

Total yardage in	<i>Cu. Yds.</i>
Main Channel...	1,340,675
Jan. 1, 1894, No. of	
yds. excavated to	
date.....	131,400

Estimate—

January.....	36,800
February.....	17,000
March.....	31,243
April.....	42,797
May.....	44,060
June.....	51,100
July.....	47,200
August.....	43,400
September.....	59,500
October.....	55,700
November.....	53,000
December.....	61,170

Total No. of yds. 611,170

excavated during	
1894.....	547,970

Total No. of yds. excavated to Jan. 1, '95..... 679,370

Balance remaining 661,305

Percentage of excavation required.... 58.5

Percentage of excavation done..... 50.6

NOTE—River Diversion and Levee work not included.

SECTION NO. 5.

The output for the month on this section was 15,200 yards of glacial drift and 7,000 yards of solid rock. Nine thousand eight hundred and forty-five yards of the former were excavated with two steam shovels working a total of twenty-five and one-half days and averaging 390 yards per day. The remaining 5,355 yards were taken out with small cars.

The rock was moved with one cable way and two steam hoists. The former worked twenty and one-half days averaging 217 yards per day, and the latter were employed twenty-seven days averaging fifty-two yards per day.

The condition of the section at the end of the year is as follows:

Total yardage in	<i>Cu. Yds.</i>
Main Channel...	1,329,854
Jan. 1, 1894, amount	
done to date....	218,700

Estimate—

January.....	16,400
February.....	13,300
March.....	500
April.....	4,700
May.....	29,700
June.....	43,800
July.....	43,500
August.....	81,000
September.....	43,100
October.....	41,400
November.....	20,800
December.....	22,200

Total amount excavated during 1894 363,400

Total amount excavated to Jan. 1, '95 582,100

Balance remaining 747,754

Percentage of excavation required.... 57.3
 Percentage of excavation done..... 43.7

NOTE—River Diversion, Levees, etc., not included.

SECTION NO. 6.

There were handled on this section during the month 22,000 yards of glacial drift and 23,700 yards of solid rock. Two steam shovels worked in the former a total of thirty-three days, their output being 14,652 yards, an average of 444 yards each per day. The balance, 7,348 yards, was taken out with dump cars and a steam hoist.

The 23,700 yards of rock were handled by four cable ways in a total of seventy-five days, an average of 316 yards each per day.

The condition of the work on the section at the end of the season is as follows:

Total yardage in	<i>Cu. Yds.</i>
Main Channel...	1,234,274
Jan. 1, 1894, amount	
done, to date.....	136,100

<i>Estimate—</i>	
January.....	9 200
February.....	14 300
March.....	17,700
April.....	37,700
May.....	62,200
June.....	62 900
July.....	35,800
August.....	43,700
September.....	47 900
October.....	35,100
November.....	35,700
December.....	45,700

Total amount exca-	
vated during 1894	447,900

Total amount exca-	
vated to Jan. 1, '95	584,000
Balance remaining.	650,274

Percentage of excavation required.... 44.2
 Percentage of excavation done..... 47.3

NOTE—River Diversion, Levee work, etc., not included.

SECTION NO. 7.

The work on this section during the month of December has been mostly in solid rock, the estimate being for 900 yards of glacial drift and 25,700 yards of solid rock.

The solid rock was moved with one cable way, two Hulet cantilevers and two

Hulet derricks. These appliances have not worked well since cold weather set in, some being especially deficient in steam capacity, which is being remedied by putting in larger boilers and other improvements. Their daily average output since starting is as follows: For the cable way, 332 yards; for the Hulet cantilevers, 190 yards, and for the Hulet derricks, 219 yards.

The condition of the section at the close of the year is as follows:

Total yardage in	<i>Cu. Yds.</i>
Main Channel...	1,072,774
Jan. 1, 1894, amount	
done to date.....	135,000

<i>Estimate—</i>	
January.....	20,400
February.....	8,200
March.....	24,300
April.....	22,600
May.....	20,200
June.....	39,500
July.....	41,400
August.....	52 200
September.....	64,100
October.....	56,000
November.....	22,500
December.....	26,600

Total amount exca-	
vated during 1894	398,000

Total amount exca-	
vated to Jan. 1, '95	533,000

Balance remaining	539 774
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Percentage of excavation required.... 46.4
 Percentage of excavation done..... 49.6

NOTE—River Diversion, Levee work, etc., not included.

SECTION NO. 8.

The estimate for December credits this section with 5,800 yards of glacial drift and 52,200 yards of solid rock. The five cable ways worked a total of ninety-three days, making the excellent daily average of 496 cubic yards each. Their average since starting up is 357 yards per day. The steam hoist worked twenty-two days, averaging 246 yards per day for the month and 273 yards per day since March 1st, 1894.

The condition of the section at the close of the year was as follows:

Total yardage in	<i>Cubic Yds.</i>
Main Channel...	1,206 891

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Jan. 1, 1894, amount
done to date..... 84,100

Estimate —

January.....	11,700
February.....	12,600
March.....	25,500
April.....	44,900
May.....	54,700
June.....	76,000
July.....	76,200
August.....	66,600
September.....	42,400
October.....	57,300
November.....	53,600
December.....	58,000

Total amount exca-
vated during 1894..... 579 500

Total amount exca-
vated to Jan. 1, '95..... 663 600

Balance remaining..... 543 291

Percentage of excavation required..... 61
Percentage of excavation done..... 55

NOTE—River Diversion, Levee work, etc.,
not included.

SECTION NO. 9.

The work on this section during the past year has been done principally with small dump cars loaded by manual labor and drawn from the pits to the edge of the spoil bank by steam hoists and thence hauled away by teams. Three of these steam hoists are in use. They were operated a total of seventy-four days during the month of December and averaged 512 yards per day each.

Two Hulet conveyors are also employed, whose daily average for the year has been 330 yards each, and for the past month 449 yards each.

The output for the month was 60,900 cubic yards, of which 7,000 was glacial drift and 53,900 solid rock.

The condition of the section at the end of the year is as follows:

Total yardage in	<i>Cu. Yds.</i>
Main Channel...	1,079,109
Jan. 1, 1894, amount	
done to date.....	131,300
<i>Estimate—</i>	
January.....	9,600
February.....	17,500
March.....	22,500
April.....	33,000

May.....	29 500
June.....	46 900
July.....	43 700
August.....	65 700
September.....	51 200
October.....	67,800
November.....	55 500
December.....	60 900

Total amount exca-
vated during 1894..... 508 800

Total amount exca-
vated to Jan. 1, '95..... 640,100

Balance remaining..... 439 009

Percentage of excavation required.... 61.0

Percentage of excavation done..... 59.3

NOTE—River Diversion, Levee work,
etc., not included.

SECTION NO. 10.

The work on this section during the past year has been done with three Brown cantilever conveyors and with two or three steam hoists and dump cars. The greater part of the work was done by the former. It was upon this section that the first cantilever was erected as an experiment, and it at once proved its superior adaptability and efficiency for economically handling and disposing of such enormous quantities within such limited compass. This led to the erection of two more cantilevers upon this section and eight others on the three sections next adjoining on the west, all of which have done the most successful work ever seen in excavation of this character.

The output for the month was 38,700 cubic yards of which 2,100 was glacial drift and 36,600 solid rock. The three cantilevers were operated sixty-three days, averaging 521 cubic yards per day each.

The condition of the section at the close of the year was as follows:

Total yardage in	<i>Cu. Yds.</i>
Main Channel...	1,172,374
Jan. 1, 1894, amount	
done to date.....	243,300
<i>Estimate—</i>	
January.....	41,700
February.....	43,900
March.....	46,800
April.....	50,400
May.....	59,600
June.....	61,100
July.....	63,700

January 30.]

—2501—

[1895.

August	65 500
September	55,200
October	61,600
November	44,900
December	38,700

Total amount excavated during 1894	634,100
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Total amount excavated to Jan. 1, '95	877,400
---------------------------------------	---------

Balance remaining	294,974
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Percentage of excavation required.... 61.0

Percentage of excavation done..... 74.8

NOTE—River Diversion, Levee work, etc., not included.

SECTION NO. 11.

The work on this section during the month of December has been in solid rock, of which there were excavated 27,300 cubic yards. This material was moved with two Brown cantilevers, one of which worked twenty days, averaging 635 yards per day, and the other worked eighteen and six-tenths days, averaging 784.9 yards per day, which is much the highest average yet attained by any appliance employed on the Channel in rock excavation. The section is about two months in advance of the contract requirement, and will doubtless be completed ahead of time.

The condition of the work at the end of the year is as follows:

Total yardage in	<i>Cu. Yds.</i>
Main Channel...	1,033,732

Jan. 1, 1894, amount done to date.....	307,400
--	---------

Estimate—

January	23,700
February	26,792
March	23,200
April	31,700
May	27,500
June	38,800
July	41,600
August	41,000
September	30,600
October	29,940
November	24,800
December	27,300

Total amount excavated during 1894	371,932
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Total amount excavated to Jan. 1, '95	679,332
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Balance remaining.	354,400
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Percentage of excavation required.... 61
Percentage of excavation done..... 65.7

NOTE—River Diversion, Levee work, etc., not included.

SECTION NO. 12.

Although the estimates at the close of the year show that this section is about ten days in arrears (\$7,342.70) upon a money basis, two more Brown cantilevers that were formerly employed on Section 13 were, some time since, transferred to this section, which gives them four cantilevers, capable of doing nearly double the required rating. Two of them were operated a total of thirty-eight and nine tenths days during December, moving 20,900 yards, an average of 537 yards each per day, and the other two handled 18,400 yards in thirty-five and two-tenths days, averaging 522 yards each per day. A small derrick handled about 2 000 yards, making the total output for the month 41,300 cubic yards of solid rock, which is equal to 160 per cent of the monthly rating.

The condition of the section at the end of the year is as follows:

Total yardage in	<i>Cu. Yds.</i>
Main Channel....	1,030,500
Jan. 1, 1894, amount done to date.....	323 200

Estimate—

January	19 200
February	16,000
March	24,000
April	22,300
May	18,200
June	25,000
July	30,100
August	28 100
September	26,300
October	40 500
November	35,700
December	41,300

Total amount excavated during 1894	326,700
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Total amount excavated to Jan. 1, '95	649,900
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Balance remaining.	380,600
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Percentage of excavation required..... 61
Percentage of excavation done..... 63

NOTE—River Diversion, Levee work, etc., not included.

SECTION NO. 13.

This section, together with the two preceding ones, are operated by one firm of contractors, and, with the exception of one small derrick engaged in taking out a limited quantity of fluxing stone, all work on the three sections is being handled with eight Brown cantilever conveyors, which are distributed between the sections as the rate of progress requires.

This section at one time employed four Brown cantilevers, but being more than six months (\$133,123.97) in advance of its contract requirement, two of them were permitted to work across on to the adjoining Section 12 in order to equalize the progress and maintain the respective ratings. The two remaining averaged 605 yards each per day, the total output for the month of December being 25,100 cubic yards of solid rock.

The condition of the section at the close of the year is as follows:

	<i>Cu. Yds.</i>
Total yardage in	
Main Channel...	1,088,700
Jan. 1, 1894, amount	
done to date.....	409,622
<i>Estimate—</i>	
January.....	27,800
February.....	31,100
March.....	42,100
April.....	49,000
May.....	41,600
June.....	53,400
July.....	56,400
August.....	54,300
September.....	34,200
October.....	45,900
November.....	31,000
December.....	26,100
Total amount excavated during 1894	496,900
Total amount excavated to Jan. 1, '95	906,522
Balance remaining	182,178
Percentage of excavation required....	61.0
Percentage of excavation done.....	83.2

NOTE—River Diversion, Levee work, etc., not included.

SECTION NO. 14.

During the month of December all of the glacial drift excavation on this section was completed and the levees finished. The output of glacial drift for the month was 42,000 cubic yards, and in future the con-

tractors will have to depend wholly upon an increased rock production to recover the large delinquency and maintain progress. To complete the excavation on contract time will require an average monthly output of 48,513 cubic yards. While the section is in arrears about 250,000 cu. yds. on excavation (not including retaining wall), its condition is not necessarily a grave one, provided efficient appliances are employed. This is evidenced by the rate of progress made on Sections 8, 9 and 10 during the past year, on each of which entirely different methods are employed, all of which have been fully tested and found efficient. The average output on those three sections for the past year is about equal to the above noted requirement to complete this one, and demonstrates that its completion on time is within easy range of proper effort.

The principal appliances employed for removing the rock from the pit are four very large double-arm, self contained derricks, and two fixed derricks. The first two erected were, upon trial, found to have been improperly designed and unequal to the strains imposed upon them. After spending several weeks' time with them in desultory work and experimentation, one of these derricks was rebuilt upon lines intended to correct the defects disclosed in the first structure. The result was a decided improvement so far as capacity is concerned, and induced the contractors to build two more new ones of a similar pattern, which are now in operation with fairly satisfactory results. It is also intended to rebuild the other defective derrick above mentioned. The contractors have also had built on trial, two fixed companion derricks, mounted on opposite sides of the Channel. A trial of them disclosed some defects which it is believed can be remedied, but thus far sufficient opportunity has not been afforded to properly test their utility. It has also been found necessary to suspend work with the first derrick rebuilt, in order to provide more powerful machinery for its operation. In addition to these derricks, the contractors have one incline and steam hoist in operation, and intend to put in another.

While the stability of these immense derricks to withstand the continued strain required of them may perhaps be an uncertain factor, the contractors express the ut-

most confidence in their strength, durability and capacity, when all are gotten in proper working order, to finish the section on time, and the quantity of rock excavated during the month of December seems to warrant such confidence, provided the derricks prove to be substantial.

The rock estimate for the month shows as follows:

APPLIANCES.	Days worked.	Cubic yards excavated.	Average No. yds. each per day.
Derricks Nos. 1, 2 and 3.....	135.5	39,100	288
Derricks Nos. 5 and 6	14.5	1,400	97
Incline and steam hoist.....	19.6	4,100	209
Totals.....		500	

The above shows a total of 45,100 cubic

yards for the month, which is very near the necessary average above stated. It will also be observed that nearly all (39,100 cubic yards) of this work was done with three derricks (1, 2 and 3), which includes the one rebuilt and the two built after a similar pattern above referred to. These were operated day and night most of the time. Derricks Nos. 5 and 6 are the ones that are before mentioned as on trial. They were operated but a few days, which developed the necessity of some changes. The contractors claim that should these two derricks fail entirely, with derrick No. 4 rebuilt, and an additional incline steam hoist, they will be able to speedily recover their delinquency and fulfill all requirements.

The condition of the section at the end of the year is as follows:

	Glacial Drift Excavated.	Solid Rock Excavated.	Total Excavated.	Grand Total Excavated.	
Total yardage in Main Channel.....					1,402 755
January 1, 1894, amount done to date.....	43,065	119,305		162,371	
January estimate.....					
February estimate.....	1,500	6,195	7,695		
March estimate.....		11,000	11,000		
April estimate.....	20 934	12 200	33 134		
May estimate.....	32 500	5,300	37 800		
June estimate.....	38 500	13 400	51,900		
July estimate.....	35,000	13,900	48,900		
August estimate.....	45 000	14 200	59 200		
September estimate.....	36,200	13,500	49,700		
October estimate.....	21 300	13,200	34,500		
November estimate.....	27,700	28 500	56,200		
December estimate.....	42,000	45,100	87,100		
Total amount excavated during 1894..	300,634	176,495		477,129	
Total amount excavated to Jan. 1, '95..					639,500
Balance remaining.....					763,255

Percentage of excavation required, solid rock..... 63.5
 Percentage of excavation done, solid rock..... 17.2

SECTION NO. 15.

Work on this section was commenced on the 19th of September removing the glacial drift, a limited quantity of which overlaid the solid rock. Channelling was commenced October 8th and rock excavation was begun November 8th, the material being loaded on dump cars by means of a steam shovel. During the month of December the steam shovel has been working day and night opening up a cut about ten feet deep and forty feet wide along the right side of the Channel. It commenced at about Station 1500 and is now at Station 1506+25. Another incline and steam hoist is erected at Station 1510 and it is intended to work another steam shovel from that point to Station 1520.

The contractors state that these two steam shovels will be able to handle sufficient material to make the required progress after these first cuts are taken out. The section contains 639,700 cubic yards of solid rock to remove, which within the twenty months covered by the contract requires an average monthly output of about 32,000 yards.

Not more than twenty working days can be relied on per month, and with each shovel working day and night gives eighty shifts per month for both shovels. To make the progress claimed, each shovel

would have to handle material equal to 400 cubic yards of solid rock per shift of 10 hours. The solid rock, when broken, will increase in volume from 75 to 100 per cent, giving from 700 to 800 yards per shift, which each shovel must average to maintain progress. Such expectations are too extravagant to require comment. The entire plant on the section is as follows:

Employed.

- 1 Air compressor plant.
- 4 Steam boilers, 35 horse power.
- 1 Steam shovel.
- 1 Hoisting engine and incline.
- 7 Power drills.
- Channellers.
- 2 Pumps.
- 12 Small dump cars.

Unemployed.

- 1 Steam shovel.
- 1 Hoisting engine and incline.
- 12 Dump cars.

The excavation done during the month was in solid rock, and amounted to 7,600 cubic yards. This material was handled by one steam shovel in forty-one and one-half shifts of ten hours each, an average of 183.1 yards per shift.

The condition of the section at the end of the year is as follows:

	Glacial Drift.	Solid Rock.	Total.	
Total yardage in Main Channel, solid rock.....				639,700
Total yardage in Main Channel, glacial drift.....				36,000
				675,700
October, 1894, estimate.....	24,200		24,200	
November, 1894, estimate.....	5 300	2 100	7,400	
December, 1894, estimate.....		7,600	7,600	
Total amount excavated to January 1, 1895.....				39,200
Balance remaining.....				636,500
Percentage of excavation required.....				15.0
Percentage of excavation done.....				5.8

I have not herein given the machinery and plant upon each of the several sections, as they are the same as noted in previous reports; and while I have had occasion to mention the special adaptability and effectiveness of the Brown cantilever for solid rock excavation, the utility of the Lidgerwood cableway should not be overlooked nor its advantages in a wider range of service underestimated.

With but few exceptions, I regard the sections now sufficiently well equipped to fulfill their contract obligations, and all contractors seem to be endeavoring to obtain that end. The progress made during the past year is highly gratifying and unparalleled in the annals of excavation.

Respectfully submitted

(Signed) U. W. WESTON,
Superintendent of Construction."

STATEMENT SHOWING THE AMOUNT OF WORK DONE DURING THE
MONTH OF DECEMBER, 1894—(MAIN CHANNEL).

SECTIONS.	Amount Done During December.	Average Monthly Requirement.	Deficiency for December.	Excess Over Monthly Requirement.	Per Cent. of Monthly Requirement.
O.....	\$ 2,188 41	\$13,271 42	\$11,083 01	.....	16
N.....	920 00	10 674 33	9,754 33	.....	9
M.....	6,705 30	6 274 34	.....	\$ 430 96	107
L.....	13,120 20	8 682 32	.....	4,437 38	151
K.....	13,500 00	11,559 57	.....	1,940 43	117
I.....	14,225 00	11 398 49	.....	2,826 51	125
H.....	1,454 35	12,493 57	11 039 22	.....	12
G.....	11,873 12	15,277 64	3,404 52	.....	78
F.....	.....	8,276 42	8 276 42	.....	00
E.....	8,287 92	23,230 53	14,942 61	.....	36
D.....	12,608 31	19,215 65	6,607 34	.....	66
C.....	15,645 83	13,443 10	.....	2,202 73	116
B.....	13,773 78	12,901 32	.....	872 46	107
A.....	6,860 00	24,012 30	17,152 30	.....	29
1.....	30,759 30	44 801 03	14,041 73	.....	69
2.....	37 580 60	20 950 88	.....	16,629 72	179
3.....	40,719 56	29,177 70	.....	11 541 86	140
4.....	31,985 51	22 982 67	.....	9,002 84	139
5.....	9 857 00	18 387 51	8,530 51	.....	54
6.....	23 359 50	26 827 41	3 467 91	.....	87
7.....	19,123 50	25 622 15	6,498 65	.....	75
8.....	40,527 50	21 799 22	.....	18,728 28	186
9.....	43 269 10	19,325 00	.....	23,944 10	224
10.....	29 805 00	22,458 34	.....	7,346 66	133
11.....	21,635 25	19 455 05	.....	2 180 20	111
12.....	32 730 25	20,413 93	.....	12 316 32	160
13.....	19,509 75	21,140 02	1,630 27	.....	92
14.....	45,803 00	22 648 61	.....	23,154 39	202
15.....	4,484 00	23,607 65	19,123 65	.....	19
Totals.....	\$552,311 04	\$550 308 67	\$135,552 47	\$137 554 84	100.36

NOTE—Revision of average monthly requirements is in accord with the preliminary estimates furnished by the Assistant Engineers.

FORCE REPORT—DAILY AVERAGE—DECEMBER, 1894.

SECTIONS.	Men.	Teams.	Steam Shovels.	Steam and Air Pumps.	Steam and Air Drills.	Steam and Air Hoists.	Chann- nels.	Air Com- pressors.	Conveyors.	Locomo- tives.	Cars.	Dredges.	Steam Tow Boats.	Scows.
O.....	30	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.4	1.7	4.7
N.....	5	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
M.....	63	7	1.2	3.7	.....	.....	.....	.....	1.3	.....	10.	.....	.....	.....
L.....	101	5	2.8	1.	.....	.....	.....	.....	2.9	.....	.....	.....	.....	.....
K.....	88	4	3.3	.....	.....	.....	.....	.....	3.3	.....	.....	.....	.....	.....
I.....	108	10	3.	3.2	.....	.....	.....	.....	3.1	.....	.....	.....	.....	.....
H.....	32	6	.8	1.	.....	.....	.....	.....	1.	.....	6.	.....	.....	.....
G.....	96	18	2.6	2.	.....	.....	.....	.....	1.	.....	70.	.....	.....	.....
E.....	153	2	2.	3.	.....	.....	.....	.....	.....	4.	38.	.....	.....	.....
D.....	95	18	3.	2.	.....	.....	.....	.....	.....	4.	32.	.....	.....	.....
C.....	154	33	2.	4.	.....	.....	.....	.....	.....	.....	36.	1.	.....	1.
B.....	181	16	2.	3.4	.....	.....	.....	.....	.....	1.	19.	.....	.....	.....
A.....	60	1	.....	.....	.....	.....	.....	.....	.....	3.	25.	1.	.....	.....
1.....	244	4	5.	8.2	.....	1.1	.....	.....	.....	8.	76.	.....	.....	.....
2.....	378	26	2.8	5.7	8.5	3.6	3.3	.....	3.1	.....	55.	.....	.....	.....
3.....	522	22	.8	3.9	15.8	1.9	7.5	2.1	6.	.....	48.	.....	.....	.....
4.....	312	29	3.6	9.7	3.8	2.6	2.8	.....	1.6	.....	54.	.....	.....	.....
5.....	165	4	1.	6.	3.6	2.3	1.6	.....	1.9	2.	60.	.....	.....	.....
6.....	253	9	1.3	8.6	8.1	2.	4.3	.9	3.5	.....	25.	.....	.....	.....
7.....	158	.....	.....	7.	7.6	.....	1.4	.8	3.	.....	.....	.....	.....	.....
8.....	302	3	.....	7.8	14.	.9	5.5	.9	3.7	.....	8.	.....	.....	.....
9.....	485	17	.....	8.4	14.5	2.7	5.9	.....	1.6	.....	168.	.....	.....	.....
10.....	239	3	.....	4.3	12.4	.2	6.	.9	2.6	.....	4.	.....	.....	.....
11.....	106	4	.....	6.3	6.3	.....	4.4	1.	1.5	.....	.....	.....	.....	.....
12.....	206	4	.....	6.0	11.5	.....	4.2	1.	2.9	.....	.....	.....	.....	.....
13.....	120	4	.....	5.1	6.3	.....	2.9	1.	1.5	.....	.....	.....	.....	.....
14.....	409	8	2.	.....	21.1	1.0	5.4	2.	.....	.....	.....	.....	.....	.....
15.....	69	4	1.6	3.0	6.6	1.6	2.7	1.	.....	.....	.....	.....	.....	.....
Totals.....	5,234	278	40.8	113.2	140.1	19.9	57.9	11.6	45.5	26.	734.	4.4	1.7	5.7

TABLE OF AMOUNT OF WORK DONE (INCLUDING RIVER DIVER

SECTIONS.	CONTRACTORS.	MAIN CHANNEL.		RIVER DIVERSION.		RUBBLE MASONRY.
		Glacial Drift.	Solid Rock.	Glacial Drift.	Solid Rock.	
		Cubic Yds.	Cubic Yds.	Cubic Yds.	Cubic Yds.	Cu. Yds.
O	McMahon & Montgomery Co. et al.	518,821		7 600		
N	Hayes Bros. et al.	71 300				
M	The Heidenreich Co.	343,800				
L	The Heidenreich Co.	458,100				
K	Christie & Lowe.	414,600				
I	Christie & Lowe.	680,400				
H	Gahan & Byrne.	141,444				
G	Gahan & Byrne.	527,906				
F	Ricker, Lee & Co.	504 293		158,234		
E	Angus & Gindele.	518 382		95,718		
D	E. D. Smith & Co.	1,117,872				
C	Western Dredging & Imp. Co.	792,987		162,537		
B	Heldmaier & Neu.	600,477		208,626		
A	Heldmaier & Neu.	859,322		120 786		
1	Griffiths & McDermott.	423,166		5 876		
2	McArthur Bros.	576,527	32,242	29,516		
3	Gilman & Co.	351,288	200,352			
4	McArthur Bros.	672,879	6,491			
5	The Qualey Construction Co.	567,000	15,100			1,300
6	Mason, Hoge & Co.	540,900	43,100	112,700		1,300
7	Mason, Hoge & Co.	169,600	363,400	97,000	41,800	
8	Mason, Hoge, King & Co.	41 600	622,000	56,600	96,900	
9	Halvorson, Richards & Co.	71,700	568,400	37,700	16,000	
10	E. D. Smith & Co.	29 200	848,200	27,400	56,500	
11	Mason, Hoge & Co.	44 032	635,300	5,756	11,483	
12	Mason, Hoge & Co.	27,400	622,500	11,739		
13	Mason, Hoge & Co.	32 822	873,700			
14	Smith & Eastman.	343,700	295,800			
15	Wright, Meysenburg, Sinclair & Carry	29,500	9,700			
Total		11,471,018	5,136,285	1,137,788	222,688	2,600

Main Channel, glacial drift.....
 Main Channel, solid rock.....
 River Diversion, glacial drift.....
 River Diversion, solid rock.....
 Rubble Masonry.....

Total amount required to be done January 1st, 1895.....
 Total amount done January 1st, 1895.....

Total amount short as per contracts.....

Total value of work done under contracts January 1st, 1895.....
 Reserved..... { 12½ per cent.....
 { 10 per cent.....

Total value of vouchers paid, including those of January 1st, 1895..
 Total value of vouchers paid for collateral work, including those of
 January 1, 1895.....

Total disbursement, Construction Account.....

NOTE.—*Overhaul to Levee—Section 1 not included.

Changes in monthly requirements and total progress required are made

SION) AND CONDITION OF WORK ON CONTRACTS JAN. 1ST, 1895.

Total value of work done to Jan. 1st, 1895, on each section.	Total value of work required to be done to Jan. 1st, 1895.	Amounts behind as per contracts.	Amounts ahead as per contracts.	Average monthly progress called for in contracts.	Average monthly progress necessary Jan. 1st, 1895, to time of completion.	Progress made during month of December, 1894.
\$110,464 81	\$114,928 00	\$ 4,463 19	.....	\$14,366 00	\$14,644 94	\$ 3,700 81
16,399 00	85,394 64	68,995 64	.....	10 674 33	14,986 56	920 00
74,604 60	56,469 06	.....	\$ 18,135 54	6,274 34	5,140 87	6,705 30
90 245 70	78,145 38	.....	12,100 32	8 682 82	7,926 55	13 120 20
103 650 00	104 036 13	386 13	.....	11,559 57	11,583 70	13,500 00
170 100 00	102,586 41	.....	67,513 59	11,398 49	7,178 89	14,225 00
41,018 76	112,442 13	71,423 37	.....	12 493 57	16,957 53	1,454 35
147 813 68	137,498 76	.....	10,314 92	15,277 64	14,632 96	11,873 12
157 350 16	169,473 96	12,123 80	.....	9,415 22	10,223 48	.....
168 631 41	225 033 87	56 402 46	.....	23 230 53	26,990 69	8 287 92
295,537 41	345,881 70	50,344 29	.....	19,215 65	22 571 94	12 608 31
224,548 14	264,522 78	39,974 64	.....	14,695 71	17,360 69	15,645 83
218,457 81	263,476 44	45,018 63	.....	14,637 58	17,638 83	13,773 78
300,158 08	453,651 30	153,493 22	.....	25,202 85	35,435 74	6 860 00
*164 243 96	348,421 87	184,177 91	.....	44,801 03	55,635 03	31,233 10
315,793 08	486,506 58	170,713 50	.....	21,152 46	30,636 53	37 580 60
327,728 90	399,103 80	71,374 90	.....	29,177 70	33,936 03	40 719 56
324 213 05	551,584 08	227,371 03	.....	22,982 67	36,357 44	31,985 51
181,121 50	432,106 49	250,984 99	.....	18,387 51	32,729 52	9 867 00
211,170 50	298 771 04	87,600 54	.....	26,896 13	32,371 16	23,359 50
367 138 00	372,534 86	5,416 86	.....	25 699 42	26,037 97	19,123 50
562 909 75	599,475 75	36,566 00	.....	23,979 03	26,264 41	40,527 50
477,847 60	497,505 75	19,658 15	.....	19,900 23	21,128 85	43,269 10
737,910 00	594 506 25	.....	143,403 75	23,780 25	14 817 52	29,805 00
527,636 40	492,986 75	.....	34,649 65	19,719 47	17,553 87	21,635 25
505,170 80	512 513 50	7,342 70	.....	20,500 54	20,959 47	32,730 25
661,624 47	528,500 50	.....	133,123 97	21,140 02	12,819 77	19 509 75
318,610 00	566,215 25	247,605 25	.....	22 648 61	38,123 95	45,803 00
11,328 00	70,822 95	59,494 95	.....	23,607 65	27,107 35	4,484 00
\$7,813,425 57	\$9,265,115 98	\$1,870,932 15	\$419,241 74	\$561,497 02	\$649,752 24	\$554,347 24

Cubic Yards.

.....	11,471,018
.....	5,136,285
.....	1,137,788
.....	222,683
.....	2,600
.....	\$9 265,115 98
.....	7,813 425,57
.....	1,451,690 41
.....	\$7,813,425 57
.....	\$956,198 52
.....	135,089 52
.....	1,091,288 04
.....	\$6,722,137 53
.....	†622,138 98
.....	\$7,344,276 51

†Overhaul to Levee—Section 1 included.

according to the Assistant Engineers' revised preliminary estimates.

"CHICAGO, Jan. 2, 1895.

Mr. Isham Randolph, Chief Engineer:

DEAR SIR—The work of Division 2 for the month of December, 1894, was as follows:

The special topographical party ran sixty-six miles of levels making a total 298 miles. This finishes Addison Township and adds Elk Grove Township to the list noted in the November report.

The topographical survey of Joliet is, in all main features, finished. The field notes have been reduced and maps have been nearly completed to a scale of fifty to the inch. The territory mapped is that lying adjacent to the Illinois and Michigan Canal and the Desplaines River from the Elgin, Joliet & Eastern Railway to a point about one-half mile below Brandon's bridge.

The work is progressing below Joliet, the work being finished to a point about 9,000 feet below the Brandon bridge.

Considerable work was done on plats and profile of Illinois and Michigan Canal and Illinois River.

The work of designing and preparing plans for regulating works, tail race and Channel through Joliet was continued.

Considerable time was given to the consideration of the questions pertaining to the execution of work on Main Channel.

The work of preparing record photographs was continued, as was also the maintenance of water gauges.

Expenses for January will approximate to those for December.

Very respectfully,

(Signed) THOS. T. JOHNSTON,
First Assistant Chief Engineer.

"CHICAGO, Jan. 15, 1895.

Mr. Isham Randolph, Chief Engineer:

DEAR SIR—I herewith submit the report of Division 3 for the month of December, 1894.

The platting of the topography on the District map was continued, the original and tracing being nearly completed.

Platting was continued on the right of way maps for Plat Book No. 1. Considerable work was devoted to the second and third books. The acreages of many tracts were checked for this work.

The original drawings of Nos. 1 to 5 of

the large scale topographical maps through Joliet, which were received from Division 2, were finished, and tracings of Nos. 1 to 4 were made. A tracing of No. 5 was commenced.

Work was commenced on two tracings of the right of way tracts on the Desplaines River, between the north line of Section 34, Township 36 North, Range 10 East and Joliet, together with the descriptions of the tracts and their acreages.

Some work was done on a map of the Upper Illinois River, two Canal charts and the profile of the Illinois River.

The school maps were finished; also the originals and tracings of the map, profile and cross-section of Section F.

A tracing of the map and progress profile of the Main Channel was made.

The original drawings of the cross sections of the Desplaines River in the vicinity of Joliet, which were received from Division 2, were finished. The tracings were commenced.

Commenced a tracing of the Chicago, Santa Fe and California Railroad Right-of-Way Map, below Joliet, for the use of the field parties.

The platting of the Lower Illinois Map was continued.

Several colored prints were made as ordered.

The expense for January will be the same as for the past month.

Yours respectfully,

(Signed) EDGAR WILLIAMS,
Second Assistant Chief Engineer."

SEMI-ANNUAL PROPERTY RETURN FROM ENGINEERING DEPARTMENT.

The Clerk presented a report from the Chief Engineer, transmitting the semi-annual property return from the Engineering Department, for the half year ending December 31, 1894.

The report was read, and, by unanimous consent, was ordered printed, and, with accompanying property return, placed on file.

The following is

THE REPORT:

"CHICAGO, Jan. 29, 1895.

To the Honorable Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I herewith transmit the

property return of the Engineering Department for the half year ending December 31, 1894.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."
 (Accompanied by property return.)

THE ROMEO ROAD CROSSING OVER MAIN CHANNEL.

The Clerk presented a report from the Chief Engineer, asking authority to expend not to exceed \$850 for completing and surfacing about 1400 feet of roadway for the Romeo road crossing over the Main Channel on Section 12, as set forth in the report; and the report was read.

Mr. Cooley, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed and placed on file, and the Chief Engineer authorized to expend not to exceed \$850 on the Romeo road crossing, as set forth in the report.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, and the Chief Engineer authorized to expend not to exceed \$850 on the Romeo road crossing, as set forth in the report.

The following is

THE REPORT:

"CHICAGO, Jan. 30, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The work of excavation on Section 12 has now reached the Romeo road and it will be necessary to make a crossing of the Channel for that road 700 feet east of the present crossing to enable the three lifts to be gotten out with cantilevers, as is being done on this section.

It is not considered safe to carry the road on the east side parallel with the Channel on the Sanitary District right of way, and we have gotten the consent of the property owner on the east of the Santa Fe Railroad to carry the road on his property, and have the consent of the Santa Fe Company to change the railroad crossing, provided the same is done free of expense to both parties.

I have had Mr. Harrison make an estimate on the cost of doing this work and

he reports to me this morning that it would be about \$756. This means the building and surfacing of about 1,400 feet of roadway. My impression is that something will have to be added to this estimate for proper material to surface the roadbed with, as there is nothing near at hand for this purpose, and I should increase this estimate to \$850.

I ask your permission to have the work done at once, as the contractors are now ready to enter upon the ground.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

REQUISITION FOR OFFICE AT CORWITH.

The Clerk presented a report from the Chief Engineer, making requisition for authority to rent a Division office in the vicinity of Corwith at not to exceed \$25 per month, and providing for the abandonment of the Summit and Brighton Park offices, as set forth in the report; and the report was read.

Mr. Kelly, seconded by Mr. Boldenweck, moved that the report be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously and the report was ordered printed and so referred.

The following is

THE REPORT:

"CHICAGO, Jan. 30, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—As reorganized under the new rules governing the Engineering and Construction Departments, there are but four Residencys or Construction Divisions. The Division nearest Chicago includes the eight sections east of Section F. It is most desirable that the headquarters of the Division should be as near the center thereof as possible, and, therefore, I ask for authority to rent office room at or in the vicinity of Corwith, at a cost not to exceed \$25 per month. The offices at Summit and Brighton, under this arrangement, will be abandoned. On the Brighton office we have a lease running to February, 1897, and steps should be taken to sublease it. On the Summit office we have no lease.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

PROGRESS OF RE-ORGANIZATION OF ENGINEERING DEPARTMENT.

The Clerk presented a report from the Chief Engineer, stating that he would require time additional to that authorized at the meeting held January 16, 1895, (page 2483 of the Proceedings) for the re-organization of the Engineering Department, under the revised rules, for reasons as set forth in the report; and the report was read.

Mr. Boldenweck, seconded by Mr. Kelly, moved that the report be ordered printed and placed on file, and the Chief Engineer granted ten days additional from this date for the re-organization of the Engineering Department.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed and placed on file, and the Chief Engineer granted ten days additional from this date for the re-organization of the Engineering Department.

The following is

THE REPORT:

“CHICAGO, Jan. 30, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—When the revised rules were adopted on the 16th inst. you called upon me to state the length of time which would be required to effect a re-organization under them, and I asked for at least ten days, which were accorded me. I thought it best to have each Assistant Engineer make the measured estimate for the current month upon the division of which he had charge before making the change from five to four Divisions, and instructed them accordingly. The inclement weather has somewhat delayed their operations in the field, but that work is now done and they have let all of the men go who are not to be retained in the service, except a small number needed to complete the calculations on the estimates.

The reorganized department will be in smooth running order within ten days. Hoping that this state of facts meets your approval, I am

Yours respectfully,

(Signed) ISHAM RANDOLPH,
Chief Engineer.”

REQUISITIONS FOR ADDITIONAL MEN FOR SPECIAL SERVICE.

The Clerk presented four (4) reports from the Chief Engineer, making requisition for men for special service, additional to those allowed by the rules, as set forth in the reports; and the reports were read.

Mr. Boldenweck, seconded by Mr. Eckhart, moved that the reports be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the reports were ordered printed and so referred.

The following are

THE REPORTS:

“CHICAGO, Jan. 30, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I hereby make requisition for one man in addition to the force provided for in the rules, to be employed on special service; pay to be \$75 per month.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer.”

“CHICAGO, Jan. 30, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Under the rules limiting the number of employes of this Department, twelve men are allowed in the Instrument Grade and ten men in the Computers Grade. Of the men already retained in the service, one in each of these grades is engaged in special work which cannot be abandoned for some time to come, and I am therefore obliged to ask under Rule 46 for one instrument man and one computer to meet the needs of the Construction Division. These appointments to be made from among the trained employes of the department whose services will otherwise be dispensed with. The duration of this service will probably be three months.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer.”

“CHICAGO, Jan. 30, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—We have had three men

inspecting the preparation of foundations for masonry walls on the Lemont Division. This I regard as a necessary work, but we may be able to do what is required in that line, until the spring opens, with two men. I therefore ask authority to continue two of the men we now have on that special work and to pay the third man up to February 1st. Their pay is \$75.00 per month each.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

—
"CHICAGO, Jan. 30, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—Under Rule 46 it is necessary that you should recognize the existence of the party now engaged in making the topographical survey which you authorized August 15, 1894, (page 2102) and for which you made appropriations on that date and again on December 5th (page 2340), so that the men employed on said survey may be paid.

The last appropriation for this work is not yet exhausted. As soon as this survey is finished, Mr. Geo. H. Cook, who has charge of it, will take his assignment on the Construction Division, and the two men he has with him will leave the employment of the District, there being no opening for them under the reorganization.

Please pass an order for the payment of these men for such services as they may render between the 16th inst. and the expiration of their engagement.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

AWARDING AND COMPLETION OF CON-
TRACT FOR RE-LETTING OF
SECTION F.

Mr. Eckhart, for the Joint Committee on Engineering and Finance, presented a report from that Committee, recommending the awarding of the contract for the completion of the excavation of Section F of the Main Channel to Frederick C. Weir and John McKechney, the lowest bidders of January 9, 1895, as provided in the report, and transmitting in duplicate the amended contract for the work on said section, the same being executed by the said lowest bidders, and also transmitting communication from F. C. Weir, presented and referred to that

Committee at the meeting held January 16, 1895, (page 2484 of the Proceedings); and recommending that the President and Clerk be authorized and directed to execute the said contract on behalf of the District upon the completion of the bond, as provided in the report, and further recommending that the check deposited on January 9, 1895, by F. C. Weir, with his bid for said section, be returned; and the report was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the report be adopted, with accompanying contract, ordered printed, and, with all enclosures, placed on file, the recommendations made in the report concurred in, the President and Clerk authorized and directed to execute the said contract on behalf of the District upon the completion of the bond, and the Clerk directed to return to F. C. Weir the check deposited with his bid for the work on said section.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—seven (7). Excused and not voting—Mr. Cooley—one (1). Nays—None.

Upon which result the President declared the motion carried, the report adopted, with accompanying contract, ordered printed, and, with all enclosures, placed on file, the recommendations contained in the report concurred in, the President and Clerk authorized to execute the said contract on behalf of the District on the completion of the bond, and the Clerk directed to return to F. C. Weir the check deposited with his bid for the work on said section.

The following is

THE REPORT, WITH ACCOMPANYING CONTRACT, ETC.:

"CHICAGO, January 30, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—At your last meeting, in accordance with the recommendation of your Committee, you awarded the contract for the completion of the work on Section F to F. C. Weir, he being the lowest bidder therefor, and directed the Clerk to notify him to appear and execute the contract and furnish a bond satisfactory to your Honorable Body.

Pursuant to said notice Mr. Weir came before your Committee and presented satisfactory surety. He also requested that Mr. John McKechney be allowed to join with him in the execution of said contract.

Your Committee could see no objection to this, and accordingly the contract for the completion of the work on said Section F has been executed in duplicate by said Frederick C. Weir and John McKechney.

We transmit herewith copies of same and recommend that the President and Clerk be directed to execute same on the part of the District so soon as the bond shall have been properly executed by the surety, and that when said contract shall have been thus executed by both parties and delivered, the deposit of five thousand (\$5,000) dollars made by said F. C. Weir, with his bid, be returned to him.

We return herewith for filing the communication of Mr. Weir of January 12, 1895.

(Signed)

B. A. ECKHART,

WM. BOLDENWECK,

W. H. RUSSELL,

THOMAS KELLY,

Joint Committee on Engineering and Finance.

(Accompanied by contract in duplicate and communication.)

The following is

THE CONTRACT, ETC;

“SANITARY DISTRICT OF CHICAGO.

Contract and specifications for the Main Drainage Channel in the Valley of the Desplaines River from Willow Springs to a point near Summit, Ill.

This agreement, made and entered into this twenty-eighth (28th) day of January, A. D. 1895, by and between the Sanitary District of Chicago, of the first part, and Frederic C. Weir and John McKechney, doing business under the firm name and style of Weir, McKechney & Co., of the second part.

A—

WITNESSETH: That the said party of the second part has covenanted, contracted and agreed, and by these presents does covenant, contract and agree with said party of the first part, for the consideration of the payments to be made as provided for herein, to the said party of the second part, by the said party of the first part, and under a penalty expressed in a bond bearing even date herewith, at his own proper cost and expense to do all the work, and to furnish all material, tools, explosives, labor and all ap-

pliances and appurtenances called for by this agreement, in the manner and under the conditions hereinafter stipulated that are necessary to the complete excavation and entire removal of earth, rock, glacial drift and other material, from that portion of the said Main Drainage Channel, known and distinguished by the specification herein contained, and the plans accompanying them, as Section “F,” together with the building of all collateral works, which by the terms of this contract are included in the same. Said section to be entirely completed and prepared ready for inspection as provided for in Section 27 of an Act of the Legislature of the State of Illinois, entitled “An Act to create Sanitary Districts and to remove obstructions in the Desplaines and Illinois River,” approved May 29, 1889, in force July 1, 1889.

B—

It is further covenanted, contracted and agreed that the work shall be executed under the direction and supervision of the Chief Engineer of the Sanitary District of Chicago, and his properly authorized agents, and by whose measurements and calculations the quantities and amounts of the several kinds of work performed under this contract shall be determined, and on whose inspection all work shall be accepted or condemned. The said Chief Engineer and his properly authorized agents shall have full power to reject or condemn all materials furnished or work performed under this contract which do not fully conform to its spirit, and to the terms and conditions herein expressed; and the Chief Engineer shall decide every question which may arise between the parties hereto relative to the execution thereof, and his decision shall be final and binding upon both parties.

C—

Wherever the words “Sanitary District” are used in this contract, they shall be understood to mean the Sanitary District of Chicago, as represented by the Board of Trustees or their duly authorized and accredited agents.

Wherever the word “Engineer” is used herein it shall be understood to mean the Chief Engineer of the Sanitary District of Chicago or his properly authorized agents, limited by the particular duties intrusted to them.

Wherever the word “Contractor” is used herein it shall be understood to mean the person or persons or copartnership or corporation entering into the contract as party of the second part.

SPECIFICATIONS.

D—

1. *Location*—The work covered by and included in these specifications is the excavation of that part of the Main Drainage Channel and the building of certain collateral works for the Sanitary District of Chicago, located between the west line of the Willow Springs road, in Section 32, and a point near the east line of Section 12, Township 38 north, Range 12, east of the Third Principal Meridian, in Cook County, Illinois. Beginning at the said west line of the Willow Springs road, the said part of the said Main Drainage Channel follows the Desplaines River Valley, being located north and west of the Illinois and Michigan Canal, approximately, as shown on the accompanying plans marked "1," and as it shall be located by the Engineer. The total approximate length of the excavation is 32,500 feet, or about six miles.

2. *Sections*—For the purpose of conveniently designating different portions of the work, and of dividing it into contracts, the said part of the Main Drainage Channel shall be divided into six sections, as follows:

Sec. A. Extending from the station designated 740 to the station designated 660.

Sec. B. Extending from the station designated 660 to the station designated 610.

Sec. C. Extending from the station designated 610 to the station designated 560.

Sec. D. Extending from the station designated 560 to the station designated 510.

Sec. E. Extending from the station designated 510 to the station designated 460.

Sec. F. Extending from the station designated 460 to the station designated 415.

3. *Grade*—The grade line of the bottom of said Main Channel at the station designated 740 shall be at an elevation of 24 feet below the datum established by the Illinois and Michigan Canal Trustees in 1847, and shall rise thence with a uniform slope at the rate of 0.03 of a foot vertical, to 1,000 feet horizontal, to the end of the excavation at Station 415, where it shall have an elevation 23.03 feet below datum.

The Sanitary District reserves the right to change said grade by raising or lowering it, or by increasing or decreasing the

slope, thereby increasing or decreasing the amount of excavation; provided, that said change shall in nowise affect the terms of this contract as to price, or entitle the said contractor to any compensation additional to the rate fixed by this contract, or render the Sanitary District liable for any damages whatsoever, direct or indirect. Provided, further, that the said change shall in no place affect the grade by an amount exceeding four feet; and that the Sanitary District shall notify the said contractor of any such change before any portion of said channel shall have been finished in conformity to the grade, as hereinbefore specified.

4. *Cross Section for Walled Channel*—The bottom of the finished channel from Station 740 for a distance of 2,700 feet, more or less, shall have a width of 160 feet in the clear. The sides of the said length of channel shall be walled above the rock and the part of the sides that come in rock are to be kept vertical and worked out with a channeling machine from top to bottom, the channels being cut ahead of the blasting. In doing this, the bottom of each cut of the machine is to be made to a uniform level above the grade, and each succeeding one offset six inches from the one just preceding. The contractor will be allowed to work the rock in one or two stops, at his option, so far as concerns the main portion of the width of the channel, but in case he elects to work the face in stops having a greater height than the reach of the channeling machine in depth, then the blast holes are to be so disposed as to effectually prevent any blast from breaking or shattering the rock beyond the sides of the prism of the channel, which are to be left as smooth and solid as can be obtained with a skillful and proper use of a channeling machine.

In determining the width of the channel at the top of the rock, the necessary offsets made by the operation of the machine are to be allowed for. Provided, that where the depth of the rock does not exceed twelve feet, there shall be but one reach or cut of the channeling machine made, and that where its depth is over twelve feet there shall be but two cuts made.

The earth for the walled channel shall be so excavated as to leave a berm on top of the rock equal to three eighths ($\frac{3}{8}$) of the depth of the rock surface below a level of 5 feet above datum; provided that the berm shall in no event be less than 5 feet; and provided further,

that should any portion be entirely in earth, the additional width at bottom shall conform to the above rule. In all cases the earth shall be taken out with the least slope which it is found can be safely maintained until the retaining walls are built, and as may be directed by the Engineer from time to time.

5. *Retaining Walls*—The sides of the 160 foot channel above the rock are to be walled with dry rubble masonry as soon as practicable after the channel is excavated.

If the bottom of the channel is in earth, or glacial drift, the retaining walls shall be founded upon a footing made in a trench dug not less than one foot below grade, and as much deeper as may be directed by the Engineer, said footing course to project 12 inches beyond the face of the wall. If the bottom of the channel is in rock, the retaining walls are to be founded upon the surface of the rock. Before beginning the construction of the wall, the surface of the rock is to be cleared of earth and foreign substances, and all loose and soft rock is to be removed for the full width of its base, that the wall may be founded upon a clean, solid stratum. If this stratum of natural rock inclines towards the Main Channel with such an inclination and in such a manner as, in the opinion of the Engineer, to render the footing of the wall liable to slip on the same, then the contractor shall excavate the top surface of the rock parallel with and beneath the proposed wall, in accordance with the directions of the Engineer, so as to effectively remove all liability of slipping. The walls in all cases are to be built to a height of five feet above datum. Their thickness at the top shall be four (4) feet, and at the bottom they shall have a thickness equal to one-half of their total height; provided that their thickness at the bottom shall never be less than their top thickness plus their total batter. At no point is their thickness to be less than one-half their height. The back of each wall is to be built in vertical planes with offsets, as shown on Plan marked "3."

The bottom of the walls shall be fair with the sides of the channel. The tops of the walls on different sides of the channel are to be 83 feet from the center line of the channel, making a distance apart in the clear 166 feet, or otherwise, as directed by the Engineer.

The retaining walls are to be built of stone taken out of the excavation, those of the larger size and the most regular

rectangular shape being selected for the faces and for main binding stones; the face of each wall to be laid true to line, the stones being scabbled and carefully placed in a firm position on their natural quarry beds without the use of spawls or small stones in their joints. The walls are to be laid in courses not less than twelve inches, nor more than thirty inches in thickness, no stone being used in the face less than twelve inches in thickness, and whose depth and width is less than twice its thickness, each course being carried through the whole thickness of the wall before another course is begun. In laying each course, the larger stones are to be carefully placed in position, covering the whole surface of the wall in such manner as to break joints with the larger stones of the preceding course, thereby thoroughly binding the wall into a solid mass; all spaces between the larger stones to be filled with smaller ones, which shall be reduced to such size with a hammer that all the larger interstices and uneven places shall be entirely filled, and an even and uniform bed prepared for the succeeding course. Only selected stones of a size sufficiently large to cover the whole thickness of the wall are to be used for the top course.

The space between the back of the walls and the slope of the excavation are to be filled by the contractor with broken rock or gravel taken from the excavation. The surface of the back filled material, when finished, to be inclined toward the wall at the rate of one vertical to ten horizontal, unless otherwise directed by the Engineer. Where the Main Channel runs through depressions of any kind which are lower than the top of the walls, the whole space shall be filled from the retaining walls to the sides of the depressions.

6. *Cross-section for Unwalled Channel*—From a point at or about the station designated 713 to the station designated 415, the sides of the channel are not to be walled, the channel having a cross-section as shown on Plan "4."

Where the bottom of said channel is wholly in earth or glacial drift, it is to have a bottom width of 210 feet, except for that portion of Section F east of the rocky stratum at Summit, for which the bottom width is to be 100 feet; the sides being excavated with a slope of two horizontal to one vertical, to a height of 25 feet above grade; thence to the natural ground surface they are to have a slope of one and one-half horizontal to one vertical. Where the bottom of the

channel is wholly or partly in rock the specified width and slopes are to apply to the determination of the cross section above the rock; the rock itself being excavated with side slopes of one-half to one, the upper edges of the rock slopes being the lines of intersection of the planes of true slopes above the rock with its surface.

The rock for the unvalled channel is to be excavated without the use of a channeling machine, the bottom of the channel being taken out to the true grade for the whole width. The sides and upper edge of the rock excavation to be left free from all sharp and ragged projections, as may be directed by the Engineer. Whenever the unvalled channel passes through the river bed, or a depression of any kind having an elevation of less than 10 feet above datum, said river bed or depression is to be filled evenly to said elevation of 10 feet above datum for the whole length of said river bed or depression from the slope of the channel to the main spoil bank.

7. *Connection of Walled and Unvalled Channel*—The walled part of the channel is to join the unvalled part by a gradual enlargement as shown on Plan "5." The retaining walls being spread so as to increase the bottom width of the channel to 210 feet in a distance of 125 feet. From this point to the intersection with the slope of the unvalled portion of the channel dry rubble retaining walls and slope paving are to be extended in the manner represented on said Plan "5," and as may be directed by the Engineer.

8. *River Diversion*—In Sections A, B, C, E and F, the contractor is to change the course of the Desplaines River within the limits of the right of way in the manner shown on Plan "1."

The Diversion Channel in each case is to be excavated to the grade shown on Plan "2," and to a width of 200 feet with slopes of one to one. All the material from the excavation in each section is to be wasted on the south side of the new River Channel, except such as is used in levees as hereinafter specified. That portion of the River Diversion channel in each respective section is to be classed as belonging to that section.

9. *Clearing and Grubbing*—The contractor will be required to remove all trees, stumps, buildings, fences or other incumbrances, except such buildings as the Sanitary District may elect to retain, within 200 feet of the center line of the channel, or that may be in the way of

any collateral or subsidiary work herein specified. All such material of value shall be the property of the contractor, and all worthless material shall be disposed of as directed by the Engineer. The cost of this work shall be included in the prices for excavation as herein-after stated.

10. *Levees*—The said contractor in entering upon the work provided for in this contract, shall, as directed by the Engineer, build levees as shown on Plans "1" and "4," as follows: Throughout the whole length of Sections A, B, C and D, a levee shall be built, about 50 feet south of the Desplaines River, as finally determined by the changes hereinbefore specified, and parallel therewith. It shall not be less than 20 feet wide on top and is to be built to a height of 20 feet above datum, with slopes of $1\frac{1}{2}$ to 1. Throughout Sections E and F, said levees shall be continued on the south side of the new River Channel and 120 feet therefrom, measured to the toe of the slope, joining the Chicago, Santa Fe and California Railway grade east of the railway bridge over the Desplaines River. Said levee for each section, after the River Diversion shall have been completed, is to join with the levees for adjacent sections.

Should the Sanitary District so elect, the contractor is to build a levee on the north side of the new River Channel beginning with the high ground on the east end of Section D, extending throughout Sections E and F, and joining the high ground north of the Chicago, Santa Fe and California Railway and west of the Desplaines River. Said levee to be built parallel with the new channel and 120 feet north of the same, measured to the foot of the slope. Said levee to be 20 feet wide on top, with slopes of $1\frac{1}{2}$ to 1 on the outside, and 2 to 1 on the inside. Its grade to be 20 feet above datum, at its lower end and it is to rise thence with a uniform grade to the Chicago, Santa Fe & California Railway, when its elevation is to be 24 feet above datum, and thence it is to rise to a height of 25 feet above datum at its upper end. On the outside of said levee a ditch three feet deep and six feet wide on the bottom with slopes of $1\frac{1}{2}$ to 1, is to be cut.

The contractor for Section F is to build a levee along the east side of the Desplaines River, extending from the Chicago, Santa Fe and California Railway northward for a distance of about 3,200 feet, joining the high ground on the east of the Desplaines River. It is to

be 20 feet wide on top, with slopes of $1\frac{1}{2}$ to 1 on the outside, and 2 to 1 on the inside. Its grade at the said railway is to be 24 feet above datum, and it is to rise thence with a uniform grade to its north end when the elevation of the grade is to be 26 feet above datum. At some point in said levee, as may be directed by the Engineer, the contractor is to leave an opening for an overflow weir.

That portion or those portions of the above specified levees falling within any section are to be classed as belonging to that section.

Said contractor shall build all or any levees, in addition to that specified, which may be necessary to protect the work provided for in this contract, during the progress of the same. And should flooding occur either before or after the building of any such levees or before or after the building of any levee specified herein, the said contractor is to pay and sustain any and all expenses and damages to which he may be put because of such flooding.

Any levee built by said contractor, either in accordance with the terms of this contract, or for his own purposes in executing said contract, may be made of material taken from the River Diversion Channel, or the Main Drainage Channel, in which case the contractor will be paid therefor as excavated material, as hereinafter provided; or at the option of the contractor they may be built of borrowed material in which case the work is to be done at the cost and expense of said contractor, except that the contractor will be paid for any material entering into the levee north of the Desplaines River, and below the Chicago, Santa Fe and California Railway, which it may be found necessary to borrow; it being understood that the contractor will be required to use the material from the River Diversion Channel for said levee only so far as it lies adjacent to said channel. The contractor will also be paid for all material entering into the levee on either side of the river above the said railway.

11. *Disposition of Material*—The contractor is to dispose of all the material from the excavation of the channel, at his own expense, in waste banks located as shown upon Plan "1," except such as is required for roadways, levees, etc., as hereinbefore and as hereinafter specified. The material from each section being deposited within the limits of that section and within the boundaries for waste banks as shown on Plan "1." Said material to be so deposited in said waste

banks that the top thereof shall be brought to an even grade at such height as is necessary to include all the material that is to enter into the same; provided that said waste banks shall not be of less height when completed than 30 feet above datum, and that the material shall be so deposited as to form banks of substantially equal width throughout, except as shown on Plan "1"; and, provided, that the foot of the inner slope of the waste bank along the walled part of the channel shall not be nearer the edge of the Main Channel than 50 feet, and that for the unwalled part in Section A it shall not at any point be nearer than 100 feet, measured at an elevation of 10 feet above datum; and that the foot of the outer slope of all waste banks shall not approach the margin of the new or old River Channel as established by the Engineer closer than 25 feet; and that throughout Sections E and F it shall not approach nearer than 120 feet.

12. *Drainage*—The contractor is to provide all necessary pumping machinery and is to operate the same at his own cost and expense during the time of excavation, and until the whole work is fully completed and inspected, as provided for in other sections of this contract. The contractor shall dispose of any water pumped in such manner as not to interfere with the operations of other contractors for the Sanitary District.

13. *Classification of Material*—All material excavated under the provisions of this contract is to be classified under one or the other of two heads, viz: "Glacial Drift" and "Solid Rock."

Glacial drift shall comprise the top soil, earth, muck, sand, gravel, clay, hardpan, boulders, fragmentary rock displaced from its original bed, and any other material that overlies the bed rock.

Solid rock shall comprise all rock found in its original bed, even though it may be so loosened from the adjacent underlying rock that it can be removed without blasting.

14. *Quantity of Material*—A profile of the surface of the ground made approximately on the center line of the Main Channel, and also of the supposed surface of the bed rock is shown on Plan "2." These profiles, though believed to be reasonably correct, do not purport to be absolutely so, and are only presented as approximations, as is also the schedule of quantities attached as an appendix hereto. The contractor is to take all

risk as to the variation of the total quantity of material excavated, as well as the relative amount of glacial drift and solid rock.

15. *Highways*—All public roads or railroads crossing or lying adjacent to the Main Channel shall be kept open and unobstructed during the progress of the work. No interference with any public road, railroad or canal will be allowed until a temporary or permanent road or channel has been provided, under the direction of the Engineer, which will permit safe and free travel and passage.

In Section E. the contractor will be required to grade a roadway with material taken from the Main Channel, beginning at the north bank of the Illinois and Michigan Canal and extending—with the exception of the width of the Main Drainage Channel—to the proposed crossing of the Desplaines River, as shown on Plan "1," being located south of and approximately parallel with the Riverside and Summit highway. It is to have a width of 80 feet on top, and is generally to be built to a height of 30 feet above datum, with side slopes of $1\frac{1}{2}$ to 1, and is to slope with a fall of 3 in 100 to the level fixed for the bridge over the Desplaines River. Said roadway to be built in such proximity to the Illinois and Michigan Canal, the Main Drainage Channel and the Desplaines River as may be directed by the Engineer.

North of the Desplaines River, the contractor will be required to grade a bridge approach with material taken from the River Diversion Channel, corresponding in height and width to the roadway as specified for the Riverside and Summit highway, and in height to the bridge. Said approach being built with an ascent of 4 in 100.

16. *Extension of Spoil Bank*—In Section F, the contractor will be required to extend the waste bank with its normal height north of and parallel with the Riverside and Summit highway, as shown on Plan "1," to within 100 feet of the bank of the Main Channel.

17. *Bridges and Structures*—The Sanitary District reserves the right to enter upon the said Main Channel and right of way at any time or place, after or before the excavation has been completed, for the purpose of erecting or preparing for the erection of any bridge or bridges, or the building of any road or other structure, provided that such work of erection or preparation therefor shall not interfere with the contractor in carrying out the provisions of this contract. To

this end, the contractor shall make, or allow the Sanitary District to make, at the expense of said Sanitary District, such changes in railroad tracks, buildings or structures used by him, as will not interfere with the operations of said contractor, and that, in the opinion of the Engineer, are necessary to the accomplishment of the purpose in view.

Said contractor is to make all necessary excavations in or adjacent to the Main Channel, and do all necessary grading, as directed by the Engineer, that may be needed for the building of any kind of structure which the Sanitary District may wish to erect, and he is to be paid therefor at the rates hereinafter given for the Main Channel.

18. *Explosives*—The contractor is to furnish all explosive compounds for blasting the material provided to be excavated under this contract; and, whereas, the storing, handling and use of so large an amount of explosive material requires the utmost care and discrimination, it is therefore understood and agreed that the said contractor shall arrange for the storage of all explosive materials at a distance of not less than 600 feet from the work, or from any other magazine, or from any dwelling occupied for a habitation, and that not more than 5,000 pounds shall be kept in one place. It is further understood and agreed that said explosive material shall in no case be brought onto the work except when needed for the purpose of charging the blast holes, and then only in such quantity as is needed for the particular work in hand, and that none but skilled and careful men shall be employed in the handling or use of said explosives, and that no liquid explosive shall be used.

It is further understood and agreed that the ground surrounding all magazines shall be kept free of vegetable or combustible material for a radius of 100 feet, and that their walls shall be made bullet proof, to a height of one foot above the contained explosives, and that in no case shall they be made of brick or stone. It is also understood and agreed that such signals of danger, as may be directed by the Engineer, shall be given or displayed before the firing of any blast, and that the said contractor shall conform his acts to and obey all rules and regulations relative to the handling of explosives and the firing of blasts, for the protection of life or property, which may be made by the Engineer from time to time.

19. *Measurement* — Measurement for

all excavated material will be made in excavation by the cubic yard of 27 cubic feet, based upon the survey and cross-section notes of the Engineer.

All "glacial drift" excavated under the terms of this contract, or by the direction of the Engineer, whether in or out of the Main Channel, will be included in the measured quantities; provided that "glacial drift" taken out beyond the sides, or below the bottom of the true prism of the Main channel, or of any River Diversion Channel, will not be included in the measured quantities, unless, in the opinion of the Engineer, it is found that the material is of such a nature that the channel cannot be maintained of the specified cross-section, in which event all material which it may be found necessary to remove to obtain stability will be included in the measured quantities.

"Solid rock" excavated within the limits of the dimensions and grade of the Main Channel, or of any River Diversion Channel, or for the placing of any bridge or other structure, as hereinbefore specified, or that shall be taken out by the direction of the Engineer, shall be included in the measured quantities; provided, that nothing will be included for rock that comes out below grade in the excavation of any channel.

"Retaining walls" will be measured by their net cubical contents, as specified.

The yard prices given herewith are to include all work herein specified, as clearing and grubbing, levees for protection, pumping, roadways for working, back filling of retaining walls, and generally all work and material found necessary in prosecuting this contract.

20. *Extra Work*—All claims for extra labor or material furnished by the contractor, or for damages from any cause whatever, must be reported to the Engineer at the time such labor or material are furnished, or such damages occur, and they must also be presented to him in writing at the end of the month; provided that nothing shall be paid for as extra work that can be classified under any of the heads upon which prices are fixed by this contract.

Whenever work is required to be done which is not now contemplated or covered by the prices hereinafter given, the Engineer shall fix such prices for the work as he shall consider just and equitable, and the contractor shall abide by such prices; provided he enters upon such work with full knowledge of the

prices so fixed by the Engineer; but if the contractor declines executing said work at the prices fixed by the Engineer, then the Sanitary District may enter into contract with any person or persons for its execution, the same as if this contract had never existed; and if extra work, or work not provided for in this contract, is performed by the contractor before prices have been fixed for such work, then the Engineer shall estimate the same at such prices as he shall deem just and reasonable, and his decision shall be final, and the said contractor shall accept of said prices in full satisfaction of all demands against the Sanitary District for said extra work; provided, that if the extra work done under this contract is of such a nature, being distinct from other work being done by said contractor, that the actual cost of the same can be determined, then the said contractor shall receive, and the Sanitary District shall pay, in full satisfaction of the same, the actual cost of the work with fifteen per cent added; provided, further, that nothing shall be deemed extra work which can be measured or estimated under the provisions of this contract.

21. *Responsibility of Contractor*—All the work provided for in this contract is to be done under the direction and supervision of the Chief Engineer and his properly authorized agents. The contractor is to be guided by the lines, stakes, marks and grades given by them, and is to carefully preserve the same as far as possible during the progress of the work, and is to furnish all needed facilities, without charge therefor, to enable the Chief Engineer to properly give lines and grades and to measure the work from time to time.

All work will be subject to inspection by the said Engineer and his said agents, and if not in accordance with the requirements of this contract it is to be made good by the contractor.

The contractor will be responsible for the entire work until completed and accepted by the Sanitary District. The contractor will be required to give his personal attention to the fulfillment of this contract and to the execution of the work. He is to keep the same under his control, and will not be allowed to sublet all or any part of it; it being distinctly understood and agreed that the sub-letting of the work covered by this contract, or any part thereof, shall, after 30 days' notice, work a forfeiture of the contract at the option of the Sanitary District.

The contractor will not be allowed to

assign by power of attorney, or otherwise, any portion of the moneys that may become due through the workings of this contract. In case the contractor fails to comply with the provisions of this contract as to progress and character of work, he shall be duly notified in writing, and thirty days after the giving of said notice the party of the first part may declare this contract forfeited, if there is substantial failure to comply with the provisions.

22. *Changes in Plan*—In addition to the reservations hereinbefore made, the Sanitary District reserves the right to make alterations in the line, grade, plan, form, dimensions, or material of the work herein provided for, either before or after the beginning of construction; provided, that if alterations are made the general character of the work as a whole is not thereby changed. If such alterations diminish the quantity of work to be done they shall not constitute a claim for damages, or for anticipated profits on the work that may be dispensed with; if they increase the amount of work, such increase shall be paid for according to the quantity of the work actually done and at prices and rates established for such work under this contract. Notice of any change of plan must be given the contractor in writing. And it is expressly agreed that no alterations or additions or extra work are to be paid for unless directed in writing.

23. *Tools*—The contractor is to furnish all the tools of every kind and description, including pumps, cars and track necessary to the full and complete carrying out of this contract, and, on completion of the work, is to remove all tools, buildings and material of all kinds from the right of way of the Main Drainage Channel.

24. *Precautions*—Whatever precautions may be necessary to render any portion of the work more secure in any respect, or to decrease the liability of accident from any cause, or to avoid contingencies which are liable to delay the completion of the work, shall be taken by the contractor.

25. *Workmen*—The contractor shall employ competent foremen and laborers, and shall discharge, at the request of the Engineer, any incompetent or unfaithful men in his employ. None but men expert in their respective branches of work shall be employed where special skill is required.

E—

Damages—If any damages shall be done by the contractor, or by any person or persons in his employ, to the owner or occupants of lands or to any property adjoining, or in the vicinity of the work herein contracted to be done, or to a neighboring contractor, the Engineer shall have the right to estimate the amount of said damage, and to cause the Sanitary District to pay the same to the said owner or occupant, and the amount so paid for such damages shall be deducted from the money due said contractor under this contract.

Said contractor covenants and agrees to pay all damages for any personal injury sustained by any person, growing out of any act or doing of himself or his employes, that is in the nature of a legal liability, and he hereby agrees to indemnify and to save the Sanitary District harmless against all suits or actions of every name and description brought against the said Sanitary District for or on account of any such injuries or such damages received or sustained by any person or persons by or from said contractor, his servants, agents, or employes, in the execution of said work; or by or in consequence of any negligence in guarding the same; or by or on account of any act or omission of said contractor, his agents or employes; and the said contractor further agrees that so much of the money due to him, under and by virtue of this contract, as shall be considered necessary by the Board of Trustees of the Sanitary District, may be retained by the said Sanitary District until such suit or claim for damages, as aforesaid, shall have been settled, and evidence to that effect furnished to the satisfaction of the said Board of Trustees.

F—

Sanitary District Law—The said contractor hereby agrees to carry on all the work provided for in this contract, in strict conformity to the requirements of the law under which the Sanitary District of Chicago is organized, entitled "An Act to create Sanitary Districts and to remove obstructions from the Desplaines and Illinois rivers," approved May 29, 1889, in force July 1, 1889, which provides in Section 11, among other things, that "No person shall be employed on said work unless he be a citizen of the United States, or has in good faith declared his intentions to become such citizen. In all cases where an alien after making his declaration of intention to become a citizen of the United States shall, for the space of three months after

he could lawfully do so, fail to take out his final papers and complete his citizenship, such failure shall be *prima facie* evidence that his declaration of intentions was not made in good faith. And that eight hours shall constitute a day's work."

G—

Time—The contractor agrees to begin work on the Main Levee and the River Diversion Channel within fifteen days after the execution of this contract, weather permitting, or as soon after the expiration of the fifteen days as the Sanitary District shall have acquired title to and possession of the necessary right of way, and shall have notified the said contractor to begin; and he agrees to begin work upon the Main Channel within thirty days after the execution of this contract, subject to said limitations. He agrees to carry it on at such points, and in such order of procedure as the time and manner of procuring the said right of way may render necessary. Provided, that the said contractor agrees not to proceed to the execution of any part of the work until he shall have been notified by the said Sanitary District to proceed therewith.

The work of river diversion and the building of levees hereinbefore specified to be built, are to be prosecuted with all possible diligence and completed as early in the year 1893 as the weather and stage of the river shall permit; at any rate, they are to be completed on or before December 1st, 1893.

All the work provided to be done under this contract shall be completed and ready for inspection on or before the 30th day of April, of the year 1896; provided, that if for any reason the contractor is not permitted by the Sanitary District to begin the main excavation of the said channel on or before the 1st day of April, 1893, then the said Sanitary District agrees to extend the time for the completion of this contract as much beyond the time specified for its completion as the time of beginning the main work shall be subsequent to the 1st day of April, 1893.

The work done each month shall not be less than such proportion of the whole work as one month bears to the total number of months agreed upon for the completion of the work to be performed under this contract, provided that the first four months after notice to begin shall be considered as one month, and the last two months before date of completion, as one month, and, provided,

further that this rate shall not be required if at any time the aggregate work done exceeds the total proportion due to the time that has passed since notice to begin work; and always provided that the Sanitary District shall not be obligated to make payment in excess of the above monthly proportion.

H—

Prices—In consideration of the said work being carried on and completed in time and manner, as hereinbefore specified, the said party of the first part agrees to pay to the said party of the second part the following amounts for each kind of work, respectively, and the said party of the second part agrees to receive and accept the same as full compensation for the performance of the work, including the furnishing of the material, tools, labor, etc., to-wit:

a—For each cubic yard of "glacial drift" excavated, as per the terms of this contract, the sum of no and twenty-nine and one-half one-hundredths dollars (\$0.29½).

b—For each cubic yard of "solid rock" excavated, as per the terms of this contract, the sum of no and ninety one-hundredths dollars (\$0.90).

c—For each cubic yard of "dry rubble masonry" measured in the wall (actual geometric contents) the sum of dollars (\$.....).

I—

Time and Manner of Payment—It is agreed by the party of the first part, that on or before the 10th and 25th days of each month, during the progress of the work, and subject to the provisions hereinbefore specified under the head of "Time," payment will be made to the said party of the second part to the amount of 87½ per cent of the contract price of the approximate amount of work done during the previous half month, upon written certificates from the Engineer that such approximate amount of work has been done during the period, 12½ per cent, being reserved until the completion and acceptance of the whole work.

J—

Grading of Prices—Since the nature of the material to be excavated under the provisions of this contract is such that the portion lying nearest the surface can be more cheaply excavated than that lying near the bottom, it is hereby agreed by the said party of the second part that if his manner of conducting the work is such that at the time of making any pro-

gress estimate a markedly greater proportion of the top material has been excavated than of the bottom material, then the Engineer shall, in making such estimates, ascertain what amount that has been excavated up to that time of any particular class of material lies above, and what below, a horizontal plane dividing the mass of said class of material into equal parts; and if the upper portion exceeds the lower, then the total amount of material found to have been excavated previous to the time of making the estimate shall be reduced by 10 per cent. of said excess, and estimates or certificates issued on the remainder, with the percentage deductions provided for in the preceding Section 1.

K—

Certificate—On all the work provided for in this contract being completed, in accordance with the contract, and to the full satisfaction of the Chief Engineer, and on its being inspected by him and a certificate made by him setting forth the amount of said work, and that the said work has been completed, the said party of the first agrees to pay to the said party of the second part the amount shown to be due to said second party by the said certificate of the said Chief Engineer, including the $12\frac{1}{2}$ per cent. reserve.

L—

Failure to Complete—It is further agreed by the said party of the second part that if the work to be done under this contract shall be abandoned, or if it shall be assigned by him, or if he loses control of the work from any cause, excepting acts of God and the public enemy, or if the rate of progress is not such as to insure its completion within the time specified, or if at any time the Engineer shall be of opinion, and shall so certify in writing to the said party of the first part that said work or any part thereof is unnecessarily and unreasonably delayed, or that the contractor is wilfully and persistently violating any of the conditions or covenants of this contract, or is fulfilling said contract in bad faith, the said party of the first part shall have the power to notify said contractor to discontinue all work, or any part thereof, as may be designated by said party of the first part, and the said party of the first part shall thereupon have the power either to complete said work by contract or to employ such men and teams, and to obtain such machinery, implements and tools, and to purchase such material as the said Engineer may deem necessary to complete the work herein described, or any part thereof.

And in so doing said Engineer may use such tools, implements and materials as may be found upon the line of said work. The cost of doing such work by the said Engineer shall be charged to the said contractor, and the expense so charged shall be deducted and paid by the said party of the first part out of such moneys as may be due, or may at any time thereafter become due to said contractor, under and by virtue of this contract, or any part thereof, so far as the same shall suffice therefor, and the balance, if any, shall be paid by said contractor on demand.

M—

Failure to Pay Laborers—If at any time during the progress of said work the said contractor shall fail or neglect to pay for labor performed or material furnished upon said work, for ten days after it shall have become due, then the party of the first part shall have power to pay for such labor or such material out of any money or moneys that may be due to said contractor, and said amount so paid shall be retained out of any money due or to become due to said contractor.

In any such case the party of the first part is hereby authorized and empowered by the said party of the second part to ascertain the amount or amounts, due or owing to any laborer or laborers, from said contractor, in such manner and upon such proof as it may deem sufficient, and without giving any notice of such proceedings to said contractor, and the amount or amounts so found by the said party of the first part to be due and owing to said laborer or laborers, shall be final and conclusive evidence as against said contractor, and may thereafter be paid over by the said first party to such laborer or laborers.

N—

Final Payment—The said party of the second part further agrees that he shall not be entitled to demand or receive final payment for any portion of the aforesaid work or materials except in the manner set forth in this agreement, nor until each and all of the stipulations hereinbefore mentioned are complied with, and the said Chief Engineer shall have given his certificate to that effect; whereupon the said party of the first part will, at the expiration of thirty (30) days after such completion and the delivery of such certificate, pay, and it hereby binds itself to pay the said party of the second part, in cash, the whole amount of money accruing to said second party under this contract, excepting such sum or sums of money as may be lawfully retained under

any of the provisions of this contract hereinbefore set forth. Provided, that nothing herein contained shall be construed to effect the right hereby reserved of the said party of the first part to reject the whole or any portion of the aforesaid work should the said certificate be found to be inconsistent with the terms of this agreement or otherwise improperly given.

Q—

Health Regulations—Said party of the second part agrees to introduce and enforce among employees, such regulations in regard to cleanliness, the care of dwellings and premises and the disposition of garbage and offal, as shall conduce to their health and tend to prevent the inception and spread of contagious and infectious diseases among them, to make provision for an ample supply of suitable drinking water, and to take such means as shall effectually prevent the creation of a nuisance on any part of the right of way of said Sanitary District, or adjacent thereto.

Contractor's Bond—The contractor shall furnish a bond in the sum of one hundred thousand (\$100,000) dollars, with good and sufficient sureties, the same to be satisfactory to the Board of Trustees of the Sanitary District, conditioned for the faithful performance of all the terms and conditions of this contract, and should the sureties on said bond at any time fail financially, or be, in the opinion of the Board of Trustees, insufficient security for the penalty of said bond, then in that case they may, on giving ten days' notice thereof in writing, require said contractor to furnish a new or additional bond in the place of the bond so having become insufficient or worthless.

Note—It is understood and agreed that the foregoing printed form of contract and specifications is a true copy of the form of contract and specifications for the work upon Section F entered into by first party with Nathaniel H. Ricker, Francis L. Lee and Joseph A. Owens, doing business under the firm name and style of Ricker, Lee & Co., of the City of Galveston, in the State of Texas, bearing date of November 23, 1892; but that by a supplemental agreement between said parties of November 1, 1893, a copy of which is hereto attached, the westerly termination of said contract section was changed and now remains fixed at the westerly boundary line of the Summit and Riverside Highway, as now located and used, instead of at Station 460, as

specified in said contract, and the easterly termination of said section was changed and now remains fixed at the range line between Ranges Nos. 12 and 13, East of the Third Principal Meridian, in Cook County, Illinois, instead of at Station 415, as specified in said contract.

And second party hereby covenants and agrees that in consideration of the payments herein provided for they will do all the work provided for herein, and follow out all the terms and provisions hereof, so far as same have not already been executed and carried out by said Ricker, Lee & Co., to the end that all the work remaining to be done on said Contract Section F under said contract with said Ricker, Lee & Co., shall be carried out and completed by them at the rate herein specified.

By order of the Board [page 1403 of Proceedings], a change in grade of the bottom of the River Diversion was made

By order of the Board [page 1246 of Proceedings], the location of the Main Channel was changed.

By order of the Board also [page 1439 of Proceedings], a change of grade in the Main Channel was made, fixing the grade of the bottom of same, between Willow Springs and Bridgeport, at one (1) foot in forty thousand (40,000), and also fixing the elevation.

By order of the Board also [page 1247 of Proceedings], the District exercised the election given it in Paragraph 10, Section D of the contract, and directed the levee therein provided for to be built.

It is especially covenanted and agreed that the time from the date of this contract to March 1, 1895, shall be considered as one month; and April 1, 1895, is hereby fixed as the date from which all progress estimates shall be made.

It is also agreed that the monthly progress herein specified shall be estimated upon the basis of cost, that is to say, such an amount of work shall be done each month as shall earn for the contractor a sum equal to the quotient of the aggregate approximate cost of the different kinds of work herein provided for, at the prices herein specified, divided by thirteen, the number of months within which all said work is to be executed. The contractor shall pay the laborers employed by him promptly at regular intervals, and at least twice each month, and shall not pay said laborers in scrip, checks or other evidences of indebtedness, nor in any manner other than with lawful currency of the United States.

In Witness Whereof, on the day and year first above written, the said Sanitary District of Chicago has caused this agreement to be signed by its President and attested by its Clerk, and its corporate seal to be hereto affixed, and the said party of the second part have hereto set their hands and seals," etc.

REPORT ON REQUISITIONS NOS. 518 AND 519.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by Requisitions Nos. 518 and 519 for the Engineering Department, presented and referred to that Committee at the meeting held January 23, 1895 (page 2487 of the Proceedings), recommending that the same be allowed; and the report was read.

Mr. Cooley, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed and placed on file, the recommendations made therein concurred in, and the accompanying requisitions allowed.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, the recommendations made therein concurred in, and the accompanying requisitions allowed.

The following is

THE REPORT:

"CHICAGO, January 30, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In regard to Requisitions Nos. 518 and 519, for the Engineering Department, presented to the Board and referred to the Joint Committee on Engineering and Finance at the meeting held January 23, 1895 (page 2487 of the Proceedings), your Committee respectfully report that they have considered said requisitions, and return same herewith,

with the recommendation that they be allowed.

Respectfully submitted,
(Signed) L. E. COOLEY, ,
Chairman.
B. A. ECKHART,
W. H. RUSSELL,
WM. BOLDENWECK,
THOMAS KELLY,

Joint Committee on Engineering and Finance."

(Accompanied by two (2) requisitions.)

CLERK TO FURNISH MEMBERS OF CONGRESS AND GENERAL ASSEMBLY WITH DISTRICT HISTORIES AND REPORTS.

Mr. Boldenweck presented an order directing the Clerk to furnish the Senators and Representatives of the Fifty-fourth Congress and the Senators and Representatives of the Thirty-ninth General Assembly of Illinois, with copies of histories and reports of the District, as set forth in the order; and the order was read.

Mr. Boldenweck, seconded by Mr. Kelly, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, the order adopted, and the Clerk directed as provided therein.

The following is

THE ORDER:

"*Ordered*, That the Clerk of the Sanitary District be and he is hereby directed to furnish each Senator and Representative of the Fifty-fourth Congress of the United States with a copy of the Chief Engineer's pamphlet history of the District; and that he be and he is further directed to send to each Senator and Representative of the Thirty-ninth General Assembly of the State of Illinois, a copy of the Chief Engineer's pamphlet history, a copy of the "Drainage Channel and Waterway," and a copy of the pamphlet reports of all the officers of the District for 1894."

January 30,]

—2525—

[1895.

INSPECTION OF MAIN CHANNEL BY GOV-
ERNOR, LEGISLATURE AND STATE
OFFICERS.

The President announced that a tour of inspection of the Main Channel by the Governor, Members of the Legislature and State Officers of the State of Illinois had been arranged for Saturday,

February 2, 1895, on special train over the Santa Fe Road.

ADJOURNMENT.

On motion of Mr. Kelly, seconded by Mr. Eckhart, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS

—OF THE—

BOARD OF TRUSTEES

—OF THE—

SANITARY DISTRICT OF CHICAGO.

 FEBRUARY 6, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and fifty-ninth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, February 6, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—nine (9) members, were present.

MINUTES.

Mr. Boldenweck, seconded by Mr. Kelly, moved that action on the minutes of the regular meeting held January 30,

1895, be postponed until the next meeting.

The motion prevailed unanimously, and it was so ordered.

VOUCHERS.

The Clerk presented the following vouchers:

PAY ROLLS.

Eng. Dept., Chief Engineer's roll, (Jan., 1895).....	\$ 500 00
Eng. Dept., Div. No. 1, (Dec. 26, 1894, to Jan. 31, 1895).....	9,086 24
Eng. Dept., Div. No. 2, (Dec. 26, 1894, to Jan. 31, 1895).....	4,505 40
Eng. Dept., Div. No. 3, (Dec. 26, 1894, to Jan. 31, 1895).....	1,119 17
Eng. Dept., Discharged Men's roll, (Dec., 1894, and Jan., 1895).....	1,182 85
	<hr/> \$16,393 66

Clerical Dept., Clerk's roll, (Jan., 1895).....	891 67
Law Dept., Attorney's roll (Dec. 26, 1894, to Jan. 31, 1895).....	\$1,384 47
Law Dept., Joliet roll, (Jan., 1895).....	458 33
Treasury Dept., Treasurer's roll, (Jan., 1895).....	1,842 80
General Account, General roll, (Jan., 1895).	166 67
General Account, Towpath roll, (Jan., 1895)	\$ 235 00
General Account, Trustees' roll, (Jan., 1895)	88 00
	2,333 33
Police Dept., Marshal's roll (Dec. 26, 1894, to Jan. 31, 1895).	2,656 33
	4,458 63
Total.....	\$26,409 76

ENGINEERING DEPARTMENT.

Keuffel & Esser Co. (drafting supplies)...	\$ 6 28
Eugene Dietzgen Co. (drafting supplies)...	4 00
F. Mayer & Co. (blue prints).....	176 51
Chicago Blue Print Paper Co. (paper)....	1 08
W. A. Olmsted, (mounting maps).....	2 25
Rand, McNally & Co. (mounting maps)....	3 50
The Tobey Furniture Co. (furniture).....	3 75
H. G. Paterson, (type-writing).....	21 65
Treleaven Optical Co. (photo supplies)....	4 45
C. S. Austin, (ice).....	9 00
Waukesha Hygeia Mineral Springs Co. (water)	7 50
Chicago Towel Supply Co. (toweling).....	5 40
Seelig & Kandler, (repairing tapes).....	1 30
John Larney, (coal)....	18 00
Geo. Brainard, (gauge reading, Jan., 1895)...	10 00
Wm. Kirkham, (gauge reading, Jan., 1895)...	10 00
E. Hastings, (gauge reading, Jan., 1895)...	10 00
Mary Rusk, (gauge reading, Jan., 1895)...	10 00
Wm. McGinnis, (gauge reading, Jan., 1895)...	10 00
John McCaffery, (rent, Brighton Park, Jan. 1895).....	25 00
John T. Allison, (rent, Summit, Jan. 1895)...	20 00
J. M. Abbitt, (rent, Willow Springs, Jan. 1895).....	20 00
Isham Randolph, (expense).....	136 73
Wm. Trinkaas, (expense).....	5 35

Alex. E. Kastl, (traveling).....	8 34
	\$530 09

CLERICAL DEPARTMENT.

Excelsior Printing Co. (printing).....	\$2 50
C. S. Austin, (ice).....	3 00
Warner's Towel Supply, (toweling).....	2 00
	\$7 50

TREASURY DEPARTMENT.

W. G. Stanford, (expense).....	\$13 25
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LAW DEPARTMENT.

J. Underwood & Co. (carbon paper).....	\$ 4 00
C. S. Austin, (ice).....	3 00
Warner's Towel Supply, (toweling).....	1 50
Geo. E. Dawson, (expense, expert witnesses, etc).....	475 53
Geo. E. Dawson, (expense, expert witnesses).....	180 50
	\$564 53

GENERAL ACCOUNT.

Western Bank Note & Engraving Co. (engraving fourth issue —4½ per cent bonds)	\$1,590 00
<i>Frie Presse</i> , (advertising Sec. F and bonds)...	33 12
<i>The Engineering News</i> Pub. Co. (advertising Sec. F).....	24 00
Lord & Thomas, (advertising bonds).....	392 15
Sharp & Smith, (vacine points).....	45 00
	\$2,084 27
Grand total.....	\$29,709 40

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the

District for the week ending February 2, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, February 6, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending February 2, 1895, as the same have been reported to me:

Engineering Department.....	120
Clerical Department.....	4
Law Department.....	7
Treasury Department.....	1
Police Department.....	48
Telephone operator.....	1
Towpath force.....	1

Total employes..... 182

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

REQUISITION FOR ADDITIONAL MAN FOR SPECIAL SERVICE.

The Clerk presented a report from the Chief Engineer, asking authority to employ one man for special service, additional to those provided by the rules, as set forth in the report; and the report was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the report be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously and the report was ordered printed and so referred.

The following is

THE REPORT:

"CHICAGO, Feb. 6, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have to ask for one additional man to be assigned to the special service, pay not to exceed \$75.00 per month.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

POLYGRAPHS FOR CHICAGO TITLE AND TRUST COMPANY.

The Clerk presented a report from the Chief Engineer, asking authority to furnish polygraphs of the District right of way plats to the Chicago Title and Trust Company, as provided in the report; and the report was read.

Mr. Boldenweck, seconded by Mr. Cooley, moved that the report be ordered printed and placed on file, and the authority asked for therein granted.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed and placed on file, and the authority asked for therein granted.

The following is

THE REPORT:

"CHICAGO, Feb. 6, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I am in receipt of a request from the Chicago Title & Trust Co. for copies of the six plats showing the Sanitary District right of way which were filed for record January 31st of this year. With your permission I will furnish them polygraphs of these plats.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

DETAILED AND REVISED ESTIMATES OF ALL WORK ON MAIN CHANNEL.

The Clerk presented a report from the Chief Engineer, transmitting detailed and revised estimates of the volume and value of the work on each section of the Main Channel, prepared in response to an order passed at the meeting held November 28, 1894, (page 2326 of the Proceedings); and the report was read.

Mr. Boldenweck, seconded by Mr. Cooley, moved that the report and accompanying estimates be ordered printed and placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT, WITH ACCOMPANYING REVISED ESTIMATES:

"CHICAGO, Feb. 5, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I transmit herewith a transcript from the originals of the Revised Estimates returned to me by the Assistant Engineers, showing the volumes and the values of the work on

each of the sections now under contract. The facts contained in these estimates are embodied in the estimate covering the entire work which accompanied my Annual Report transmitted to you on the 16th inst.

These estimates have been prepared in compliance with your order of November 28th.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

The following are

THE REVISED ESTIMATES:

REVISED ESTIMATE OF QUANTITIES ON BRIGHTON DIVISION.

Based upon actual cross-sections. (This estimate is final, except in cases noted herein with a * which are approximate only.)

SECTION O.

CLASSIFICATION.	No. of Cu. Yds.	Price.	Cost.	Total Cost.
Main Channel—Excavation.....	1,504,734	\$0.21	\$315,994 14	
Collateral Channel—Excavation.....	132,009	.199	26,269 79	
Surface Ditches—Excavation.....	*12,000	.21	2,520 00	
Total cost.....				\$344,783 93

SECTION N.

CLASSIFICATION.	No. of Cu. Yds.	Price.	Cost.	Total Cost.
Main Channel—Excavation.....	1,105,443	\$0.23	\$254,251 89	
Surface Ditches—Excavation.....	*8,400	.23	1,932 00	
Total cost.....				\$ 256,183 89

SECTION M.

CLASSIFICATION.	No. of Cu. Yds.	Price.	Cost.	Total Cost.
Main Channel—Excavation.....	717,650	\$0.217	\$155,730 05	
Surface Ditches—Excavation.....	*5,200	.217	1,128 40	
Total cost.....				\$ 156,858 45

SECTION L.

CLASSIFICATION.	No. of Cu. Yds.	Price.	Cost.	Total Cost.
Main Channel—Excavation.....	1,094,081	\$0.197	\$215,533 96	
Surface Ditches—Excavation.....	*7,800	.197	1,536 60	
Total cost.....				\$ 217,070 56

SECTION K.

CLASSIFICATION.	No. of Cu. Yds.	Price.	Cost.	Total Cost.
Main Channel—Excavation.....	1,147,757	\$0.25	\$286,939 25	
Surface Ditches—Excavation.....	*8,200	.25	2,050 00	
Total cost.....				\$ 288,989 25

SECTION I.

CLASSIFICATION.	No. of Cu. Yds.	Price.	Cost.	Total Cost.
Main Channel—Excavation.....	1,131,649	\$0.25	\$282,912 25	
Surface Ditches—Excavation.....	*8,200	.25	2,050 00	
Total cost.....				\$ 284,962 25

Total number of cubic yards..... 6,883,123

Total cost of Brighton Division..... \$1,548,848 33

(Signed)

ALEX. E. KASTL,

Assistant Engineer.

CONSTRUCTION WORK AUTHORIZED BY THE BOARD OF TRUSTEES.

Sec.	CLASSIFICATION.	Price per cubic yard.	REMARKS.	Page of Pro- ceedings.
O...	Main Channel—Glacial Drift.....	\$0.21	Awarded May 2, 1894.....	1911
O...	Collateral work, M. B.—Glacial Drift.....	.199	Awarded May 2, 1894.....	1911
O...	Surface Ditches—Glacial Drift.....	.210	Authorized May 16, 1894.....	1945
N...	Main Channel—Glacial Drift.....	.230	Awarded May 2, 1894.....	1911
N...	Surface Ditches—Glacial Drift.....	.230	Authorized May 16, 1894.....	1945
M...	Main Channel—Glacial Drift.....	.217	Awarded December 23, 1893.....	1641
M...	Surface Ditches—Glacial Drift.....	.217	Authorized May 16, 1894.....	1945
L...	Main Channel—Glacial Drift.....	.197	Awarded December 23, 1893.....	1641
L...	Surface Ditches—Glacial Drift.....	.197	Authorized May 16, 1894.....	1945
K...	Main Channel—Glacial Drift.....	.25	Awarded December 23, 1893.....	1641
K...	Surface Ditches—Glacial Drift.....	.25	Authorized May 16, 1894.....	1945
I...	Main Channel—Glacial Drift.....	.25	Awarded December 23, 1893.....	1641
I...	Surface Ditches—Glacial Drift.....	.25	Authorized May 16, 1894.....	1945

REVISED ESTIMATE OF QUANTITIES ON SUMMIT DIVISION.

(This estimate is final in cases as noted below.)

SECTION H.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	1,073,579	\$0.29	\$311,337 91	
*Surface Ditches—Glacial Drift.....	3,453	.29	1,001 37	
Total.....				\$312,339 28

*Estimate of Surface Ditches is final.

SECTION G.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	1,356,179	\$0.28	\$379,730 12	
*Extra Width, 402-412+88—Glacial Drift.....	222	.28	62 16	
†Surface Ditches—Glacial Drift.....	7,674	.28	2,148 72	
Total.....				\$381,941 00

*Estimate of Extra Width due to change of grade is final.

†Estimate of Surface Ditches is final.

SECTION F.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	1,091,353	\$0.23¾	\$259,196 34	
Main Channel—Solid Rock.....	16,724	.80	13,379 20	
Surface Ditches—Glacial Drift.....	2,300	.23¾	546 25	
*River Diversion Proper—Glacial Drift.....	65,308	.23¾	\$15,510 65	\$273,121 79
*River Diversion Ditches—Glacial Drift.....	1,606	.23¾	381 43	
*Levees from Borrow Pits—Glacial Drift.....	91,320	.23¾	21,688 50	
*Spillway—Concrete Masonry.....			20,518 41	
*Spillway—Levees, Earth Excavation.....			11,653 09	
*Raising S. F. R. Bridge.....			5,875 65	
Total.....				75,627 73
				\$348,749 52

*Estimate of River Diversion Proper, Ditches, Levees, Spillway and Bridge is final.

SECTION E.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	469,163	\$0.27½	\$129,019 82	
Main Channel—Glacial Drift.....	1,339,517	.27½	368,367 18	
Main Channel—Solid Rock.....	78,765	1.00	78,765 00	
Surface Ditches—Glacial Drift.....	4,979	.27½	1,369 23	
*River Diversion Proper—Glacial Drift.....	68,768	.27½	\$18,911 20	\$577,521 23
*River Diversion Ditches—Glacial Drift.....	5,566	.27½	1,530 65	
*Levees from Borrow Pits—Glacial Drift.....	21,384	.27½	5,830 60	
*Overhaul—Glacial Drift.....	9,641	.26755	2,579 45	
*Summit Road Ballast—Crushed Stone Hauling.....			190 01	
Total.....				29,091 91
				\$606,613 14

*Estimate of River Diversion Proper, Ditches, Levees, Overhaul and Summit Road is final.

SECTION D.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	1,871,271	\$0.26 7-16	\$494,717 27	
Main Channel—Solid Rock.....	137,694	1.00	137,694 00	
Surface Ditches—Glacial Drift.....	6,450	.26 7-16	1,705 22	
*Raising C. T. R. R. Bridge.....			1,831 11	
*Pile Trestle—Labor and Material, 390 feet.....		2.5641	1,000 00	
+Mr. Randolph added a bill for.....				\$636,947 60
				49 43
Total.....				\$636,997 03

*Estimate of Raising C. & C. T. R. R. Bridge and Pile Trestle is final.

+Mr. Shnable was not aware of this bill.

SECTION C.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	1,853,324	\$0.23½	\$435,531 14	
Main Channel—Solid Rock.....		1.50		
Main Channel—Soft Muck Berm.....	27,015	.23½	6,348 53	
Surface Ditches—Glacial Drift.....	7,416	.23½	1,742 76	
*Levees, I. & M. Canal—Force Account.....			579 08	
*Main Channel—Building Sand.....	6,253	.12½	781 63	
River Diversion—Glacial Drift.....	175,898	.23½		\$444,983 14
				41,336 03
Total.....				\$486,319 17

Total cost of Summit Division is..... \$2,772,959 14

*Estimate of I. & M. Canal Levees and River Diversion is final.

(Signed)

E. R. SHNABLE,

SUMMIT, Ills., Dec. 28, 1894.

Assistant Engineer.

CONSTRUCTION WORK AUTHORIZED BY THE BOARD OF TRUSTEES.

Sec.	CLASSIFICATION.	Price per cubic yard.	REMARKS.	Page of Proceedings.
H...	Main Channel—Glacial Drift.....	\$0.29	Awarded Dec. 23, 1893.....	1641
H...	Surface Ditches—Glacial Drift.....	.29	Authorized May 16, 1895.....	1945
H...	S. F. Crossing.....		No contract.....	
G...	Main Channel—Glacial Drift.....	.29	Awarded Dec. 23, 1893.....	1641
G...	Surface Ditches—Glacial Drift.....	.29	Authorized May 16, 1894.....	1945
G...	S. F. Crossing.....		No contract.....	
F...	Main Channel—Glacial Drift.....	.233 $\frac{1}{4}$	Awarded Oct. 26, 1892.....	835
F...	Main Channel—Solid Rock.....	.80	Awarded Oct. 26, 1892.....	835
F...	Surface Ditches—Glacial Drift.....	.233 $\frac{1}{4}$	Authorized May 16, 1894.....	1945
F...	River Diversion proper—Glacial Drift.....	.233 $\frac{1}{4}$	Awarded Oct. 26, 1892.....	835
F...	River Diversion Ditches—Glacial Drift.....	.233 $\frac{1}{4}$	Awarded Oct. 26, 1892.....	835
F...	Levee Borrow Pits—Glacial Drift.....	.233 $\frac{1}{4}$	Awarded Oct. 26, 1892.....	835
F...	Spillway—Concrete Masonry.....		Authorized Oct. 25, 1893.....	1528
F...	Spillway Levees—Earth Excavation.....		Authorized Dec. 1, 1893.....	1572
F...	Spillway Rip-rap—Rock Excavation.....		No contract.....	
F...	Raising S. F. Bridge.....		Agreement March 21, 1894.....	1833
F...	Summit Road Crossing.....		No contract.....	
E...	Main Channel—Glacial Drift.....	.271 $\frac{1}{2}$	Awarded Feb. 1, 1893.....	1032
E...	Main Channel—Solid Rock.....	1.00	Awarded Feb. 1, 1893.....	1032
E...	Surface Ditches—Glacial Drift.....	.271 $\frac{1}{2}$	Authorized May 16, 1894.....	1945
E...	River Diversion—Glacial Drift.....	.271 $\frac{1}{2}$	Awarded Feb. 1, 1893.....	1032
E...	River Diversion Ditches—Glacial Drift.....	.271 $\frac{1}{2}$	Awarded Feb. 1, 1893.....	1032
E...	Levee Borrow Pits—Glacial Drift.....	.271 $\frac{1}{2}$	Awarded Feb. 1, 1893.....	1032
E...	Overhaul—Glacial Drift.....	.263 $\frac{1}{4}$	Authorized by Committee Mar. 8, 1894; passed March 14, 1894.....	1810
E...	Summit Road Ballast.....		Authorized Dec. 13, 1893.....	1614
E...	Summit Road Crossing.....		No contract.....	
E...	C. T. R. R. Crossing.....		No contract.....	
D...	Main Channel—Glacial Drift.....	.26 7-16	Awarded Nov. 23, 1892.....	892
D...	Main Channel—Solid Rock.....	1.00	Assumed.....	892
D...	Surface Ditches—Glacial Drift.....	.26 7-16	Authorized May 16, 1894.....	1945
D...	Raising C. T. Bridge.....		Authorized May 29, 1894.....	1971
D...	Pile Trestle—Force Account.....		Authorized Feb. 14, 1894.....	1759
C...	Main Channel—Glacial Drift.....	.231 $\frac{1}{2}$	Awarded Feb. 1, 1893.....	1032
C...	Main Channel—Solid Rock.....	1.50	Awarded Feb. 1, 1893.....	1032
C...	Main Channel—Soft Muck Berm.....	.231 $\frac{1}{2}$	Awarded Feb. 1, 1893.....	1032
C...	Surface Ditches—Glacial Drift.....	.231 $\frac{1}{2}$	Authorized May 16, 1894.....	1945
C...	Levee I. & M. Canal—Force Account.....		Approved March 28, 1894.....	1839
C...	Main Channel—Building Sand.....	.123 $\frac{1}{2}$	And June 27, 1894.....	2023
C...	River Diversion—Glacial Drift.....	.231 $\frac{1}{2}$	Agreement Feb. 21, 1894.....	1786
			Awarded Feb. 1, 1893.....	1032

REVISED ESTIMATE OF QUANTITIES ON WILLOW SPRINGS DIVISION.

Based upon actual cross-sections. (This estimate is final, except in cases noted herein with a * which are approximate only.)

SECTION B.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift	*1,576,828	\$0.27	\$425,743 56	
River Diversion—Glacial Drift.....	212,210	.27	57,296 70	
Levee Revetment—Hard Material.....	2,000	.20	400 00	
I. & M. Spoil Bank, Levee—Force Account.....			1,680 12	
Total Cost of Section.....				\$485,120 38

SECTION A.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	*2,576,508	\$0.305 $\frac{1}{2}$	\$789,055 58	\$792,405 98
Main Channel—Solid Rock.....	*4,188	.80	3,350 40	
River Diversion—Glacial Drift.....	128,288	.305 $\frac{1}{2}$	\$39,288 20	45,788 36
River Diversion—Glacial Drift.....	21,225	.305 $\frac{1}{2}$	6,500 16	
Desplaines River—Muck, etc.....	122,342	.15	.....	18,351 30
Trestle Work—Timber.....	.....	.....	.....	8,597 35
Levee Revetment—Hard Material.....	*6,000	.15	.....	900 00
Levee Revetment—Borrowed Material.....	*86,000	.36	.....	30,960 00
Levee Revetment—Overhaul.....	*50,000	.20	.....	10,000 00
Flood Damages—Force Account.....	.....	.....	.....	847 40
I. & M. Spoil Bank Levee—Force Account.....	.....	.....	.....	5,888 63
Total Cost of Section.....	.....	.....	.....	\$913,739 02

SECTION 1.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	109,540	\$0.27	\$ 29,575 60	188,841 42
Main Channel—Glacial Drift.....	11,926	.305 $\frac{1}{2}$	3,652 34	
Main Channel—Glacial Drift.....	*1,052,285	.42 9-10	451,430 27	4,772 45
Main Channel—Solid Rock.....	*536,024	.80	428,819 20	
Main Channel—Retaining Wall.....	*66,967	2.90	194,204 30	612 12
Main Channel—Slope Paving.....	*1,285	.60	771 00	
River Diversion—Glacial Drift.....	5,876	.27	1,586 52	30,000 00
River Diversion—Force Account.....	158,617	.....	137,254 90	
River Improvement—Glacial Drift.....	10,162	.....	.....	684 00
Overhaul.....	*150,000	.20	.....
I. & M. Spoil Bank Levee—Force Account.....	.....	.....	\$ 241 57	300 00
I. & M. Spoil Bank Levee—Force Account.....	.....	.....	370 55	
Willow Springs Road—Force Account.....	.....	.....	\$ 778 22	2,498 08
Willow Springs Road—Force Account.....	.....	.....	1,719 86	
Protection Levee—Force Account.....	.....	.....	\$ 673 50	300 00
Protection Levee—Hay.....	.....	.....	10 50	
Columbia Park Building Damages.....	.....	.....	.....	.....
Construction and Removal of Dyke.....	.....	.....	.....	.....
Total Cost of Section.....	.....	.....	.....	\$1,286,190 98

SECTION 2.

CLASSIFICATION.	Number of Cubic Yards.	Price Per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	29,675	\$0.28	\$ 8,309 00	\$858,986 20
Main Channel—Glacial Drift.....	*700,314	.50	350,157 00	
Main Channel—Solid Rock.....	*472,624	.80	378,099 20	68,270 16
Main Channel—Retaining Walls.....	* 37,668	3.25	122,421 00	
River Diversion—Glacial Drift.....	29,516	.28	8,264 48	\$922,256 36
River Diversion—Force Account.....	89,717	.....	55,005 68	
Total for Section.....	.....	.....	.....	.....

SECTION 3.

CLASSIFICATION.	Number of Cubic Yards.	Price Per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	73,310	\$0.27	\$ 19,733 10	
Main Channel—Glacial Drift.....	*344,314	.56	192,815 84	
Main Channel—Solid Rock.....	*764,358	.76	580,912 08	
Main Channel—Retaining Walls.....	* 13,907	3.25	43,247 75	
Total for Section.....				\$836,769 37

SECTION 4.

CLASSIFICATION.	Number of Cubic Yards.	Price Per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	48,593	\$0.27	\$ 13,120 11	
Main Channel—Glacial Drift.....	*951,062	.49	466,020 38	
Main Channel—Solid Rock.....	*341,020	.80	272,816 00	
Main Channel—Retaining Wall.....	* 58,564	\$3.25	190,333 00	\$942,289 49
River Diversion—Glacial Drift, Force Account..	106,803	}		
River Diversion—Solid Rock, Force Account....	17,857			79,910 23
Total for Section.....				\$1,022,199 72

Grand total for Willow Springs Division..... \$5,466.275 83

As the surface of the solid rock has not been uncovered over large portions of Sections 1, 2, 3 and 4, I am unable to make accurate cross-sections of glacial drift and solid rock on these sections. Also, as on Sections A and B, the depth to hard material on areas over which muck is to be removed, in order torevet the berm with hard material, has not been accurately determined, I can only certify that the foregoing estimate is approximately correct.

(Signed)

H. B. ALEXANDER,
Assistant Engineer.

CONSTRUCTION WORK AUTHORIZED BY THE BOARD OF TRUSTEES.

Section.	CLASSIFICATION.	Price per cubic yard.	REMARKS.	Page of Proceedings.
B.	Main Channel, Glacial Drift.....	\$.27	Awarded L. D. Connor & Co., Feb. 1, 1893.....	1032
			Assigned to Heldmaier & Neu, Oct. 25, 1893.....	1531
B.	River Diversion, Glacial Drift.....	.27	Awarded L. D. Connor & Co., Feb. 1, 1893.....	1032
			Assigned to Heldmaier & Neu, Oct. 25, 1893.....	1531
B.	Levee Revetment, Hard Material.....	.20	Authorized Feb. 14, 1894.....	1759
B.	I. & M. Spoil Bank Levee, Force Account.....		Authorized Nov. 15, 1893.....	1572
A.	Main Channel, Glacial Drift.....	.30½	Awarded L. D. Connor & Co., Feb. 1, 1893.....	1032
			Assigned to Heldmaier & Neu, Oct. 25, 1893.....	1531
A.	Main Channel, Solid Rock.....	.80	Awarded L. D. Connor & Co., Feb. 1, 1893.....	1032
			Assigned to Heldmaier & Neu, Oct. 25, 1893.....	1531
A.	River Diversion, Glacial Drift.....	.30½	Awarded L. D. Connor & Co., Feb. 1, 1893.....	1032
			Assigned to Heldmaier & Neu, Oct. 25, 1893.....	1531
A.	River Diversion, Glacial Drift.....	.30½	Agreement Feb. 10, 1894.....	1734
A.	Desplaines River, Muck, etc.....	.15	Agreement Sept. 26, 1894.....	2234
A.	Trestle Work, Timber.....		Authorized Oct. 18, 1893.....	1519
A.	Levee Revetment, Hard Material.....	.15	Authorized Oct. 25, 1893.....	1528
			Authorized Feb. 10, 1894.....	1734
A.	Levee Revetment, Borrowed Material.....	.36	Authorized June 27, 1894.....	2052
			Authorized Oct. 3, 1894.....	2245
A.	Levee Revetment, Overhaul.....	.20	Authorized Feb. 10, 1894.....	1734
			Authorized June 27, 1894.....	2052
			Authorized Oct. 3, 1894.....	2245
A.	Flood Damages, Force Account.....		Authorized March 28, 1894.....	1839
A.	I. & M. Spoil Bank Levee, Force Account.....		Authorized Nov. 15, 1893.....	1572
1.	Main Channel, Glacial Drift.....	.27	Awarded June 29, 1892, A. Harlev.....	606
1.	Main Channel, Glacial Drift.....	.30½	Agreement Feb. 10, 1894.....	1784
1.	Main Channel, Glacial Drift.....	.42 9-10	Awarded May 23, 1894, Griffiths & McDermott.....	1962
1.	Main Channel, Solid Rock.....	.80	Awarded May 23, 1894, Griffiths & McDermott.....	1962
1.	Main Channel, Retaining Wall.....	2.90	Awarded May 23, 1894, Griffiths & McDermott.....	1962
1.	Main Channel, Slope Paving.....	.60	Awarded May 23, 1894, Griffiths & McDermott.....	1862
1.	River Diversion, Glacial Drift.....	.27	Awarded June 29, 1892, A. Harlev.....	606
1.	River Diversion, Force Account.....		Authorized Aug. 30, 1893.....	1429
1.	River Improvement, Glacial Drift.....		Authorized Dec. 15, 1893.....	1622
			Authorized April 25, 1894.....	1903
1.	Overhaul.....	.30	Awarded May 23, 1894, Griffiths & McDermott.....	1962
1.	I. & M. Spoil Bank Levee, Force Account.....		Authorized June 17, 1894.....	2023
1.	I. & M. Spoil Bank Levee, Force Account.....		Authorized March 28, 1894.....	1839
1.	Willow Springs Road, Force Account.....		Authorized June 6, 1894.....	1984
1.	Willow Springs Road, Force Account.....		Authorized Nov. 15, 1893.....	1572
1.	Protection Levee, Force Account.....		Authorized March 28, 1894.....	1839
1.	Protection Levee, Hay.....		Authorized March 28, 1894.....	1839
1.	Columbia Park Building, Damages.....		Authorized June 6, 1894.....	1981
1.	Construction and Removal of Dyke.....		Authorized Nov. 21, 1894.....	2319
2.	Main Channel, Glacial Drift.....	.28	Awarded June 29, 1892.....	606
2.	Main Channel, Glacial Drift.....	.50	Supplemental Agreement Oct. 25, 1893.....	1529
2.	Main Channel, Solid Rock.....	.80	Supplemental Agreement Oct. 25, 1893.....	1529
2.	Main Channel, Retaining Wall.....		No contract.....	
2.	River Diversion, Glacial Drift.....	.28	Awarded June 29, 1892.....	606
2.	River Diversion, Force Account.....		Authorized Aug. 30, 1893.....	1427
3.	Main Channel, Glacial Drift.....	.27	Awarded June 29, 1892, McArthur Bros.....	606
3.	Main Channel, Glacial Drift.....	.56	Awarded Oct. 25, 1893, Gilman & Co.....	1529
3.	Main Channel, Solid Rock.....	.76	Awarded Oct. 25, 1893, Gilman & Co.....	1529
3.	Main Channel, Retaining Wall.....	3.25	Authorized Aug. 29, 1894.....	2188
4.	Main Channel, Glacial Drift.....	.27	Awarded June 29, 1892.....	606
4.	Main Channel, Glacial Drift.....	.49	Supplemental Agreement, Oct. 25, 1893.....	1529
4.	Main Channel, Solid Rock.....	.80	Supplemental Agreement, Oct. 25, 1893.....	1529
4.	Main Channel, Retaining Wall.....		No contract.....	
4.	River Diversion, Glacial Drift, Force Account.....		Authorized Aug. 30, 1893.....	1427
4.	River Diversion, Solid Rock, Force Account.....		Authorized Aug. 30, 1893.....	1427

REVISED ESTIMATE OF QUANTITIES ON LEMONT DIVISION.

Based upon actual cross-sections. (This estimate is final, except in cases herein noted.)

SECTION 5.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard	Cost.	Total Cost.
Main Channel—Glacial Drift.....	1,064,021	\$0.27	\$287,285 67	
Main Channel—Glacial Drift Overhaul.....	814,678	.04	32,537 12	
Main Channel—Spoil Bank.....	16,671	.27	4,501 17	
Main Channel—Retaining Wall.....	73,424	3.25	238,628 00	\$758,389 22
River Diversion—Rip-rap on Levee.....	1,587	.70	\$ 1,110 90	
River Diversion—Force Account.....			6,246 54	7,357 44
Total Cost of Section.....				\$765,746 66

NOTE—Except for about 1,000 feet the rock surface on the Main Channel has not been developed and therefore the final quantities on the Main Channel may vary considerably from those given above.

In the above estimate of Solid Rock and Retaining Walls, three-fourths cubic yard per lineal foot of wall has been estimated as the amount of cap rock to be removed under the wall.

SECTION 6.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard	Cost.	Total Cost.
Main Channel—Glacial Drift.....	24,100	\$0.22	\$ 5,302 00	
Main Channel—Glacial Drift.....	661,056	.27	178,485 12	
Main Channel—Solid Rock.....	549,118	.73½	403,601 73	
Main Channel—Embankment.....	29,992	.65	14,494 80	
Main Channel—Retaining Wall.....	33,736	3.25	109,642 00	\$716,525 65
River Diversion—Glacial Drift.....	118,808	.27	32,078 16	
River Diversion—Raising Levee after completion	2,707	.27	730 89	
River Diversion—Hard Material on Levee.....	11,000	.25	2,750 00	
River Diversion—Rip-rap on Levee.....	5,469	.63	3,445 47	39,004 52
Total Cost of Section.....				\$755,530 17

NOTE—The estimate on River Diversion glacial drift is final, except from Station 1000 to 1003. The levee quantities are approximate. The rock surface west of the Bracken Bank on the Main Channel has not been developed, and therefore the final quantities on the Main Channel may vary considerably from those given above.

In the above estimate of solid rock and retaining walls, three-fourths cubic yard per lineal foot of wall has been estimated as the amount of cap rock to be removed under the wall.

SECTION 7.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	184,555	\$0.26	\$ 47,984 30	
Main Channel—Solid Rock.....	888,219	.73½	652,840 97	
Main Channel—Embankment.....	4,529	.65	2,943 85	
Main Channel—Retaining Walls.....	7,935	3.25	25,788 75	\$720,557 87
River Diversion—Glacial Drift.....	97,930	.26	\$25,461 80	
River Diversion—Solid Rock.....	43,088	.73½	31,669 68	
River Diversion—Raising Levee after Complet'n.	1,478	.26	384 28	
River Diversion—Hard Material on Levee.....	4,000	.25	1,000 00	
River Diversion—Rip-rap on Levee.....	4,390	.63	2,765 70	
River Diversion—Earth Core in Levee.....			2,000 00	63,281 46
Quarrying Dimension Stone.....	34,646	1.00		34,646 00
Total Cost of Section.....				\$827,485 33

NOTE—The Levee quantities are approximate. The rock surface on the Main Channel from Station 1050 to 1057 has not been developed and therefore the final quantities on the Main Channel may vary considerably from those above given.

In the above estimate of Solid Rock and Retaining Walls, three-fourths cubic yard per lineal foot of wall has been estimated as the amount of cap rock to be removed under the wall.

SECTION 8.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	43,576	\$0.26	\$ 11,329 76	\$893,767 97
Main Channel—Solid Rock.....	1,163,315	.74¾	869,577 96	
Main Channel—Retaining Wall.....	3,957	3.25	12,860 25	
River Diversion—Glacial Drift.....	57,867	.26	\$15,045 42	
River Diversion—Solid Rock.....	99,434	.74¾	74,326 92	132,462 75
Relinquishment of Claims.....			2,000 00	
Roadway and River Diversion Bridges.....			40,868 39	
Replacing Right-of-Way Fence.....			222 02	
Quarrying Dimension Stone.....	1,400	1.00		1,400 00
Improving Stephens Street Highway.....				500 00
Total Cost of Section.....				\$1,028,130 72

NOTE—The estimate on Main Channel, Solid Rock, is a close approximation to the final quantities. In the above estimate of Solid Rock and Retaining Walls, one-half cubic yard per lineal foot of wall has been estimated as the amount of cap rock to be removed under the wall.

SECTION 9.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	73,693	\$0.26	\$19,160 18	\$793,601 54
Main Channel—Glacial Drift Approaches to Temporary Bridge.....	1,016	.26	264 16	
Main Channel—Solid Rock.....	1,005,416	.76 9-10	773,164 90	
Temporary Bridge Across Main Channel.....			1,012 30	
River Diversion—Glacial Drift.....	40,741	.26	\$10,592 66	26,584 15
River Diversion—Solid Rock.....	16,894	.76 9-10	12,991 49	
Relinquishment of Claims.....			3,000 00	
Total Cost of Section.....				\$820,185 69

NOTE—The estimates on the River Diversion, Glacial Drift and Solid Rock are final, except from Station 1170 to 1175+25. The estimate on Main Channel, Solid Rock, is a close approximation to the final quantities.

SECTION 10.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	31,104	\$0.25	\$ 7,776 00	\$ 921,018 60
Main Channel—W. S. Co.'s Roadbed.....	669	.25	167 25	
Main Channel—Solid Rock.....	1,141,370	.80	913,016 00	
Stairway to Bottom Channel.....			59 35	
River Diversion—Glacial Drift.....	30,310	.25	\$ 7,577 50	78,361 47
River Diversion—Solid Rock.....	58,276	.80	46,620 80	
River Diversion—Levee.....			24,063 17	
Roadway and River Diversion Bridge.....				15,983 63
Maintaining Western Stone Co.'s Tracks.....				2,995 01
Changes in Western Stone Co.'s Tracks.....				70 29
Ripraping and Ballasting Railroad Embankment at Quarry No. 5.....				3,120 89
Protecting Levee at Quarry No. 5.....				1,400 58
Total Cost of Section.....				\$1,022,850 47

NOTE—The estimate on River Diversion, Glacial Drift, is final, except from Station 1210+88 to 1211+88. The estimates on Main Channel, Solid Rock, is a close approximation to the final quantities.

Total Cost of Lemont Division..... \$5,219,929.04

Respectfully submitted,

(Signed)

HIRAM A. MILLER,

Assistant Engineer.

LEMONT, Dec. 26, 1894.

CONSTRUCTION WORK AS AUTHORIZED BY THE BOARD OF TRUSTEES.

Section.	CLASSIFICATION.	Price per cubic yard.	REMARKS.	Page of Proceedings.
5..	Main Channel, Glacial Drift.....	\$0.27	{ Awarded June 29, '92, Agnew & Co.. Assigned to Qualey Construction Co., Jan. 18, 1894.....	606 1702
5..	Main Channel, G. D. overhaul.....	.04	Agreement April 4, 1894.....	1849
5..	Main Channel, Spoil Bank.....	.27	Agreement April 4, 1894.....	1849
5..	Main Channel, Solid Rock.....	.73½	{ Awarded June 29, '92, Agnew & Co.. Assigned to Qualey Construction Co., Jan. 18, 1894.....	606 1702
5..	Main Channel, Retaining Wall.....	3.25	Agreement April 4, 1894.....	1849
5..	River Diversion, Force Account.....		Authorized Nov. 6, 1893.....	1548
5..	River Diversion, Rip-rap Levee.....	.70	Agreement April 4, 1894.....	1849
6..	Main Channel, Glacial Drift.....	.22	Authorized March 21, 1894.....	1829
6..	Main Channel, Glacial Drift.....	.27	{ Awarded June 29, 1892, Agnew & Co.. Assigned Mason, Hoge & Co., April 20, 1894.....	606 1881
6..	Main Channel, Solid Rock.....	.73½	{ Awarded June 29, 1892, Agnew & Co.. Assigned Mason, Hoge & Co., April 20, 1894.....	606 1881
6..	Main Channel, Embankment.....	.65	Agreement April 20, 1894.....	1881
6..	Main Channel, Retaining Wall.....	3.25	Agreement April 20, 1894.....	1881
6..	River Diversion, Glacial Drift.....	.27	{ Awarded June 29, 1892, Agnew & Co.. Assigned Mason, Hoge & Co., April 20, 1894.....	606 1881
6..	Riv. Diver., Raising levee after complet'n.	.27	Agreement Feb. 14, 1894.....	1760
6..	River Diversion, Hard material on levee..	.25	Authorized Oct. 10, 1894.....	2254
6..	River Diversion, Rip-rap on levee.....	.63	Agreement Feb. 14, 1894.....	1760
7..	Main Channel, Glacial Drift.....	.26	{ Awarded June 29, 1892, Agnew & Co.. Assigned Mason, Hoge & Co., April 20, 1894.....	606 1881
7..	Main Channel, Solid Rock.....	.73½	{ Awarded June 29, 1892, Agnew & Co.. Assigned Mason, Hoge & Co., April 20, 1894.....	606 1881
7..	Main Channel, Embankment.....	.65	Agreement April 20, 1894.....	1881
7..	Main Channel, Retaining Walls.....	3.25	Agreement April 20, 1894.....	1881
7..	River Diversion, Glacial Drift.....	.26	{ Awarded June 29, 1892, Agnew & Co.. Assigned Mason, Hoge & Co., April 20, 1894.....	606 1881
7..	River Diversion, Solid Rock.....	.73½	{ Awarded June 29, 1892, Agnew & Co.. Assigned Mason, Hoge & Co., April 20, 1894.....	606 1881
7..	Riv. Diver., Raising levee after complet'n.	.26	Agreement Feb. 14, 1894.....	1760
7..	River Diversion, Hard material on levee..	.25	Authorized Oct. 10, 1894.....	2254
7..	River Diversion, Rip-rap on levee.....	.63	Agreement Feb. 14, 1894.....	1760
7..	River Diversion, Earth core in levee.....		Agreement Feb. 14, 1894.....	1760
7..	Quarrying dimension stone.....	1.00	Agreement April 20, 1894.....	1881
8..	Main Channel, Glacial Drift.....	.26	{ Awarded June 29, 1892, Agnew & Co.. Assigned, Mason, Hoge, King & Co., Jan. 18, 1894.....	606 1702
8..	Main Channel, Solid Rock.....	.74¾	{ Awarded June 29, 1892, Agnew & Co.. Assigned, Mason, Hoge, King & Co., Jan. 18, 1894.....	606 1702
8..	Main Channel, Retaining Walls.....	3.25	Agreement, Dec. 12, 1894.....	2346
8..	River Diversion, Glacial Drift.....	.26	{ Awarded June 29, 1892, Agnew & Co.. Assigned, Mason, Hoge, King & Co., Jan. 18, 1894.....	606 1702
8..	River Diversion, Solid Rock.....	.74¾	{ Awarded June 29, 1891, Agnew & Co.. Assigned, Mason, Hoge, King & Co., Jan. 18, 1894.....	606 1702
8..	River Diversion, Relinquishment of Claims.		Agreement April 20, 1894.....	1881
8..	River Diversion, Roadway and R. D. Bridge.		Authorized Aug. 16, 1893.....	1400
8..	Riv. Diver.—Replacing Right of Way Fence		Authorized Aug. 16, 1893.....	1400
8..	Quarrying Dimension Stone.....	1.00	{ Authorized May 29, 1894..... Authorized Oct. 24, 1894.....	1972 2275
8..	Improving Stephens Street Highway.....		Authorized Oct. 3, 1894.....	2244
9..	Main Channel, Glacial Drift.....	.26	{ Awarded June 29, 1892, Agnew & Co.. Assigned Jan. 18, 1894, Halvorson, Richards & Co.....	606 1702
9..	Main Chan., G.D. & App. to Temp. Bridge..	.26	Not yet authorized.....	
9..	Main Channel, Solid Rock.....	.76 9-10	{ Awarded June 29, 1892, Agnew & Co.. Assigned Jan. 18, 1894, Halvorson, Richards & Co.....	606 1702
9..	Main Channel, Temporary Bridge.....		Authorized June 6, 1894.....	1985

CONSTRUCTION WORK AS AUTHORIZED BY THE BOARD OF TRUSTEES—CONTINUED.

Section.	CLASSIFICATION.	Price per cubic yard.	REMARKS.	Page of Proceedings.
9..	River Diversion, Glacial Drift.....	.26	{ Awarded June 29, 1892, Agnew & Co Assigned, Jan. 18, 1894, Halvorson, Richards & Co.....	606 1702
9..	River Diversion, Solid Rock.....	.76 9-10	{ Awarded June 29, 1892, Agnew & Co. Assigned, Halvorson, Richards & Co., Jan. 18, 1894.....	606 1702
9..	River Diversion, Relinquishm't of Claims..		Agreement April 20, 1894.....	1881
10..	Main Channel, Glacial Drift.....	.25	Awarded June 29, 1894.....	606
10..	Main Channel, W. S. Co.'s Roadbed.....	.25	Not yet authorized.....	
10..	Main Channel, Solid Rock.....	.80	Awarded June 29, 1894.....	606
10..	Main Channel, Stairway.....		Authorized Dec. 19, 1894.....	2368
10..	River Diversion, Glacial Drift.....	.25	Awarded June 29, 1892.....	606
10..	River Diversion, Solid Rock.....	.80	Awarded June 29, 1892.....	606
10..	River Diversion, Levee.....		Authorized Nov. 1893.....	1572
....	Roadway and R. D. Bridge.....		Authorized Aug. 16, 1893.....	1400
....	Maintaining W. Stone Co.'s Tracks.....		{ Authorized June 16, 1894..... Authorized July 25, 1894.....	1991 2064
....	Change in W. Stone Co.'s Tracks.....		Authorized Aug. 16, 1893.....	1400
....	Rip-rap and ballasting R. R. Embankment, Quarry No. 5.....		Authorized Nov. 15, 1893.....	1572

LOCKPORT DIVISION.

Revised estimate of quantities based upon actual cross-sections. (This estimate is not final.)

SECTION 11.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	44,032	\$0.30¼	\$ 13,319 68	\$797,656 93
Main Channel—Solid Rock.....	989,700	.79¼	784,337 25	
River Diversion—Glacial Drift.....	5,756	.30¼	\$ 1,741 19	42,862 39
River Diversion—Solid Rock.....	11,483	.79¼	9,100 28	
River Diversion—Core in Levee.....			17,907 10	
River Diversion—Force Account, (City Men).....			14,113 82	
Total for Section.....				\$840,519 32

SECTION 12.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	60,000	\$.30¼	\$ 9,075 00	\$886,971 25
Main Channel—Solid Rock.....	1,000,500	.79¼	792,896 25	
Main Channel—Retaining Wall.....	10,000	3.50	35,000 00	
River Diversion—Glacial Drift.....	11,739	.30¼	\$ 3,551 05	20,035 80
River Diversion—Core in Levee.....			7,541 87	
River Diversion—Deepening River.....			8,942 88	
Total for Section.....				\$857,007 05

NOTE—Twenty-two thousand cubic yards Solid Rock in side pockets included in above estimates.

SECTION 13.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	35,000	\$0.26	\$ 9,100 00	
Main Channel—Solid Rock.....	1,053,700	.74¾	787,640 75	
Main Channel—Retaining Wall.....	20,000	3.50	70,000 00	
Total for Section.....				\$866,740 75

NOTE—Forty-five thousand cubic yards of Solid Rock and 2,200 cubic yards of Glacial Drift in side pockets included in the above estimate.

SECTION 14.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	213,045	\$0.36	\$ 76,696 20	
Main Channel—Glacial Drift.....	166,210	.20	33,242 00	
Main Channel—Solid Rock.....	1,023,500	.73	747,155 00	
Main Channel—Retaining Wall.....	22,000	3.25	71,500 00	
Total for Section.....				\$928,593 20

NOTE—Four thousand cubic yards solid rock for foundation of Retaining Walls and 5,000 cubic yards solid rock in side pockets included in above estimate.

SECTION 15.

CLASSIFICATION.	Number of Cubic Yards.	Price per Cubic Yard.	Cost.	Total Cost.
Main Channel—Glacial Drift.....	36,000	\$0.19	\$ 6,840 00	
Main Channel—Solid Rock.....	639,700	.59	377,423 00	
Main Channel—Retaining Walls.....	37,400	2.35	87,890 00	
Total for Section.....				\$472,453 00

NOTE—Seven thousand two hundred cubic yards Solid Rock for foundation of Retaining Walls included in the above estimates.

(Signed)

CHAS. L. HARRISON,

January 1, 1895.

Assistant Engineer.

REMARKS—The exact quantities of Solid Rock in the Main Channel cannot be determined until the elevations of the off-sets are known; the amount to be excavated in the side pockets cannot be determined until they are excavated. The amount to be excavated for the foundations of Retaining Walls cannot be determined until the Main Channel is excavated.

C. L. H.

CONSTRUCTION WORK AUTHORIZED BY THE BOARD OF TRUSTEES.

Section.	CLASSIFICATION.	Price per cubic yard.	REMARKS.	Page of Proceedings.
11..	Main Channel, Glacial Drift.....	\$0.30 $\frac{1}{4}$	Awarded June 29, 1892.....	606
11..	Main Channel, Solid Rock.....	.79 $\frac{1}{4}$	Awarded June 29, 1892.....	606
11..	River Diversion, Glacial Drift.....	.30 $\frac{1}{4}$	Awarded June 29, 1892.....	606
11..	River Diversion, Solid Rock.....	.79 $\frac{1}{4}$	Awarded June 29, 1892.....	606
11..	River Diversion, Core in Levee.....	.....	Authorized Nov. 15, 1893.....	1572
11..	River Diversion, Force Account.....	.....	Authorized Sept. 27, 1893.....	1470
12..	Main Channel, Glacial Drift.....	.30 $\frac{1}{4}$	Awarded June 29, 1892.....	606
12..	Main Channel, Solid Rock.....	.79 $\frac{1}{4}$	Awarded June 29, 1892.....	606
12..	Main Channel, Retaining Wall.....	3.50	Agreement Dec. 12, 1894.....	2346
12..	Main Channel, Highway Bridges.....	.....	No contract.....	.....
12..	Main Channel, Highway Grading.....	.....	No contract.....	.....
12..	River Diversion, Glacial Drift.....	.30 $\frac{1}{4}$	Awarded July 13, 1892.....	619
12..	River Diversion, Core in Levee.....	.....	Authorized Nov. 15, 1893.....	1572
12..	River Diversion, Deepening River.....	.....	Authorized Aug. 2, 1893.....	1365
13..	Main Channel, Glacial Drift.....	.26	{ Awarded June 29, 1892, Agnew & Co. And July 22, 1892, Mason, Hoge & Co.....	606 636
13..	Main Channel, Solid Rock.....	.74 $\frac{3}{4}$	{ Awarded June 29, 1892, Agnew & Co. And July 22, 1892, Mason, Hoge & Co.....	606 636
13..	Main Channel, Retaining Walls.....	3.50	Agreement December 12, 1894.....	2346
14..	Main Channel, Glacial Drift.....	.36	{ Assignment to Smith & Eastman, January 13, 1894.....	1674
14..	Main Channel, Glacial Drift.....	20	{ Awarded June 29, 1892, McCormick Construction Co.....	606
14..	Main Channel, Glacial Drift.....	.....	{ Assigned to Smith & Eastman Janu- ary 13, 1894.....	1674
14..	Main Channel, Solid Rock.....	.73	{ Awarded June 29, 1892, McCormick Construction Co.....	606
14..	Main Channel, Solid Rock.....	.....	{ Assigned to Smith & Eastman Janu- ary 13, 1894.....	1674
14..	Main Channel, Retaining Walls.....	3.25	No contract.....	.....
15..	Main Channel, Glacial Drift.....	.19	Awarded August 29, 1894.....	2134
15..	Main Channel, Solid Rock.....	.59	Awarded August 29, 1894.....	2134
15..	Main Channel, Retaining Walls.....	2.35	Awarded August 29, 1894.....	2134

MONTHLY REPORT FROM TREASURY DEPARTMENT.

The Clerk presented a report from the Treasury Department for the month of January, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT :

"Balance on hand at date of last report.....	\$1,318,520.19
Received from Ft. Dearborn National Bank, interest for January..	319.72
Received from Metropolitan National Bank, interest for January...	273.58
Received from National Bank of Illinois, interest for January.....	322.52
Received from Chicago National Bank, interest for January.....	317.35
Received from American Trust and Savings Bank, interest for January.....	35.64
Received from Globe National Bank, interest for January.....	502.50
	<u>\$1,771.31</u>
Total cash received for month.....	\$1,320,291.50
Total cash disbursed during month as per annexed schedules, viz:	
Clerical Department....	\$ 935.67
Treasury Department....	166.67
Engineering Departm't.	1,429.67
Engineering—Construction Department.....	533,145.47
Law Department.....	3,790.05
Law Department—Land Account.....	21,309.50
General Account.....	6,737.79
Police Department.....	609.45
	<u>\$568,124.27</u>
Balance this date, in banks as per schedule endorsed hereon	<u>\$752,167.23</u>

(Signed) MELVILLE E. STONE,
Treasurer.
CHICAGO, Feb. 4th, 1895."

SCHEDULE :

Fort Dearborn National Bank.....	\$126,122.08
National Bank of Illinois.....	126,962.61
Chicago National Bank.....	125,638.08
Metropolitan National Bank.....	103,859.95
American Trust and Savings Bank.	21,003.79
Globe National Bank.....	248,580.72
Total..	<u>\$752,167.23</u>

REPORT ON REQUISITIONS FOR ADDITIONAL MEN FOR SPECIAL SERVICE.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by four (4) reports from the Chief Engineer, making requisition for men for special service, additional to those provided by the Rules, presented and referred to that Committee at the meeting held January 30, 1895 (page 2511 of the Proceedings), recommending that the authority requested therein be granted, under conditions, as provided in the report of the Committee; and the report was read.

Mr. Cooley, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed, and, with enclosures, placed on file, and the recommendations made therein concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and, with enclosures, placed on file, and the recommendations made therein concurred in.

The following is

THE REPORT:

"CHICAGO, February 6, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In accordance with the rules, the Chief Engineer has made requisitions on the Board for certain special employes, presented and referred to this Committee at the meeting held January 30, 1895 (page 2511 of the Proceedings), upon which your Committee reports as follows:

1. One employe for special service, at \$75.00 per month. We recommend that the same be authorized for such time as may be needed, not exceeding four months.

2. One instrument man and one computer, at the pay fixed for those grades, to take the place of men engaged on special work, which will not be completed for three months. We recommend that these be authorized as special employes, for three months ending April 30th.

3. To continue two inspectors on special work, supervising the prepara-

tion of foundations for masonry walls until Spring opens, at \$75.00 per month, and authorizing the pay of one inspector to January 31st. We recommend that the authority be granted, the two inspectors to be continued until March 31st.

4. It is requested that the party engaged in making the topographical survey, under special appropriation, be continued until the same be completed, some time during the current month, when the party will be disbanded. We recommend that the authority be granted, within the limits of special appropriation.

The reports of the Chief Engineer are returned for filing.

Very respectfully submitted,

(Signed) L. E. COOLEY,
Chairman.

B. A. ECKHART,
W. H. RUSSELL,
WM. BOLDENWECK,
THOMAS KELLY,
JOHN J. ALTPETER,

Joint Committee on Engineering and Finance."

(Four (4) enclosures.)

REPORT RECOMMENDING APPOINTMENT
OF SPECIAL COMMITTEE ON LEGIS-
LATION.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to matters contained in the Annual Report of the Chief Engineer, presented and referred to that Committee at the meeting held January 16, 1895, (page 2447 of the Proceedings) and recommending that a Special Committee on Legislation be appointed for the purposes as set forth in the report; and the report was read.

Mr. Cooley, seconded by Mr. Eckhart, moved that the report be adopted, ordered printed and placed on file, and the recommendations made therein concurred in.

On roll-call the vote stood; Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—nine (9). Nays—None.

(By unanimous consent, Mr. Prendergast was allowed to explain his vote by inserting in the Proceedings the follow-

"I do not concur in all that is said in the preamble, but, in view of the present condition of the District, I vote for the report.")

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, and the recommendations made therein concurred in.

The following is

THE REPORT:

"CHICAGO, Feb. 6, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Committee to whom was referred the annual report of the Chief Engineer, at your meeting of January 16, 1895, have given the same careful consideration.

His report was confined to matters pertaining to the Engineering Department, but inasmuch as the cost of the work entrusted to the Sanitary District is largely for construction purposes, the summary given by him of the cost of the work already under contract, and the estimated cost of work yet to be provided for before the Channel shall be ready for use, indicates sufficiently the urgent necessity of devising some means whereby the resources of the District may be increased, in order that the work carried on by it may not be delayed.

Your Committee has therefore deemed it expedient to review the subject of the expenditures and resources of the entire work of the District, including that of the other departments, to set forth briefly the reasons for the District not being in possession of sufficient funds, the additional amount needed, and the means which seem to them fitting for securing what is needed.

During the discussions which preceded the passage of the Sanitary District Act, various opinions were expressed as to the cost of the work to be undertaken thereunder.

Estimates had been prepared with as much accuracy as possible in a case where all the elements entering into the cost were not susceptible of being fully determined. At no time was it claimed that the estimates of the entire cost of the work then presented were anything more than approximate. The more conservative put the cost at \$20,000,000 to \$25,000,000, those more apprehensive asserted that it would be from \$35,000,000 to \$50,000,000.

Three ways were provided for raising the funds necessary for the carrying out of the work entrusted to the District.

1. The power to levy upon the taxable property within the limits of the District a tax not to exceed one-half of one per cent of the assessed value of same.

2. The authority to borrow money and issue bonds therefor to an amount not to exceed five per centum on the valuation of the taxable property within the District. This is the constitutional limitation upon the power of municipalities to incur indebtedness, but the District is further limited to \$15,000,000 as the total amount of indebtedness which can be incurred in this way.

3. The authority to raise money by special assessment.

Not only was it thought that these means of raising money would be ample for the needs of the District, but there was also some apprehension that, on account of the increase of the assessed valuation likely to take place, it would be possible to raise an amount in excess of what was needed, and thus an unnecessary burden might be put upon the community. This apprehension accounts for the limitation of the total indebtedness to be incurred by the District to \$15,000,000 instead of leaving it at the constitutional limitation of five per cent upon the valuation of the taxable property within the District.

There was a well grounded belief that the assessed valuation of the property within the District would increase as it had in the past, and shortly after the organization of the District it would reach \$300,000,000 or more. It has, however, not kept pace with the increase in the actual value of the property. As a consequence, the District has been deprived of large receipts which it had reason to expect.

Had the assessed valuation of the taxable property within the District reached the sum of \$300,000,000 the increased receipts from taxes for the years 1890, 1891, 1892 and 1893 would have been over one million (\$1,000,000) dollars. The District could also in that event have issued \$3,000,000 more of its bonds, the issue under the present valuation being limited to \$12,000,000.

It will thus be seen that had the assessed valuation been \$300,000,000 scarcely more than one-tenth of the real value of the property, the District would have had \$4,000,000 more up to the present time for its purposes. Upon the same

basis at least \$750,000 more might have been expected during 1895 and 1896 up to the time of the completion of the contracts. It had also been thought that at least one million (\$1,000,000) dollars could be raised by special assessment, so that the District has failed to receive about the sum of \$5,750,000 which it had reason to expect, and which everyone supposed it would obtain through the means provided for in its law.

It has been found impracticable to raise money by special assessments for the improvements thus far projected, though this means of raising money may be found advantageous when the improvement of the Chicago River and the changing of the sewers, where necessary, are undertaken.

The total cost of the work now under contract, as determined by the last revised estimates of the quantities of earth and rock to be excavated, carefully made under the direction of the Chief Engineer, is.....	\$18,991,078 49
Work yet to be contracted for, including controlling works, tail race, bridges, and channel through Joliet, estimated at.....	3,883,899 32
Cost of right of way.....	2,600,000 00
Administration, including office rent and office expenses, surveys, superintendence, printing, legal expenses, etc., for seven years, including 1895 and 1896 (in part estimated).....	1,828,238 54
Total cost of work.....	<u>\$27,303,216 35</u>

Though that portion of the work above contemplated which is not under contract has been estimated, as well as certain items of expenditure to be made in 1895 and 1896, it is thought that these estimates have been made with such care that the variance therefrom cannot be large.

The resources of the District to meet this outlay have been obtained by tax levy and by the sale of bonds.

From tax levy there has been received up to December 31st, 1894..	\$ 4,295,315 00
It is estimated that for the years 1895 and 1896, under the present limitation, there will be received the sum of.....	2,302,000 00
Received from sale of bonds.....	12,000,000 00
Income from all other sources, including bond premiums, interest on balances, etc.....	200,000 00
Total.....	<u>\$18,797,315 00</u>

So that the additional amount needed by the District over its resources, as limited by its present powers of taxation and the low assessed valuation of the property within the District, is the sum of \$3,505,901.35.

It is also estimated that there will be required for payment of bonds and interest over what may be obtained by re-issue of bonds, the sum of \$1,107,500.00.

Two methods of raising this money present themselves to the residents of the Sanitary District, those who are vitally interested in having the work finished at the earliest possible time.

One is by giving the District increased powers of taxation for a limited time, say three years. The other is by an amendment to the Constitution, permitting the District to issue \$10,000,000 of its bonds, payable not in installments, but in thirty years from the date of their issue. The latter method has some advantages. The bonds could be issued at a low rate of interest, and in some respect it would be fair that posterity, which shall derive great benefits from the completed work, should also bear a portion of the burden.

The serious objection, however, to this means of raising money is, that it cannot be known until after the November election in 1896 whether the people approve of such an amendment. Such a proposed amendment must be voted for by two-thirds of all the members elected to each house. It must be presented to the people at the next election for members of the General Assembly, and be voted for by a majority of the electors voting at such election.

The work under contract calls for the payment of between five and six hundred thousand dollars each month and the money now on hand will be exhausted during the present year, so that there would be no provision for the continuance of the work up to November, 1896.

Then, too, in order that such an amendment shall receive the endorsement of the people, there must be an act of volition on the part of the voter. He must, under our present system of voting, put a cross before the "for" or "against." It is probable that the proposed amendment would fail of receiving the necessary number of votes from the mere indifference of the voter, and that it would not become a law even if there were no negative votes.

We are thus limited to the first method, namely, giving the District the power to make an increased levy of taxes

for a limited time. This method, too, has the advantage of being in accord with the sound financial doctrine that it is always better for communities to pay as they go.

It seems best, therefore, that Section 12 of the Sanitary District Act should be so amended as to permit the levying and collecting of taxes upon the property within the District to the amount of one and one-half per centum of the assessed valuation thereof for the years 1895, 1896 and 1897.

This would produce during the three years, in addition to the amount possible under the present powers of the District, the sum of \$7,350,000. This falls short of the total amount of the deficiency, but your Committee hesitate to recommend either a greater increase of the tax levy or the levy for an additional year, preferring to rely upon the assessed valuation being raised sufficiently within this period to give us both an increased amount under the tax levy, and also to permit of the issue of more bonds.

It is hoped that from these sources sufficient money may be received to make up the balance of the sum necessary to complete the work now projected.

We, therefore, recommend that a Special Committee of three be appointed by the President, to take such steps as to them may seem proper in order to present the needs of the District to the people whom the Trustees are representing in the carrying out of this work to the end that the necessary legislation may be secured, and that the work so necessary for the health and comfort of the City of Chicago, and so important to the commercial interests of this state and of the whole country may not be delayed. That this work, so long looked forward to, may be completed at the earliest possible moment seems to your Committee a matter of such vital importance to all concerned that no effort should be spared on the part of your Honorable Body to secure this end.

Respectfully submitted,

(Signed) L. E. COOLEY,

Chairman.

B. A. ECKHART,

W. H. RUSSELL,

WM. BOLDENWECK,

THOS. KELLY,

JOHN J. ALTPETER,

Joint Committee on Engineering and Finance."

OFFICES TO BE CLOSED ON "LINCOLN'S
BIRTHDAY."

Mr. Russell presented an order, directing that the offices of the District be ordered closed on Tuesday, February 12, 1895, the same being "Lincoln's Birthday"—a legal holiday; and the order was read.

Mr. Russell, seconded by Mr. Boldenweck, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, the order

adopted, and the offices of the District ordered closed as provided therein.

The following is

THE ORDER:

"*Ordered*, That the offices of the Sanitary District of Chicago be and they are hereby ordered closed on Tuesday, February 12, 1895, the same being Lincoln's Birthday—a legal holiday."

ADJOURNMENT.

On motion of Mr. Gilmore, seconded by Mr. Kelly, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

February 6,]

—2547—

[1895.

PROCEEDINGS

—OF THE—

BOARD OF TRUSTEES

—OF THE—

SANITARY DISTRICT OF CHICAGO.

FEBRUARY 13, 1895.

OFFICIAL RECORD.

(Published by authority of the Board of Trustees of the Sanitary District of Chicago.)

REGULAR MEETING.

The two hundred and sixtieth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, February 13, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Prendergast, Russell and Wenter—seven (7) and subsequently Mr. Gilmore, making a total of eight (8) members, were present.

MINUTES.

The minutes of the regular meetings held January 30 and February 6, 1895,

were approved as printed, on motion of Mr. Boldenweck, seconded by Mr. Russell.

(Errata: Proceedings of February 6, 1895, page 2534, Section 3 Main Channel, Glacial Drift, first line, cost should be \$19,793.70. Page 2536, Section 5, Main Channel, Solid Rock is omitted entirely. Insert "Main Channel, Solid Rock, 265,833 cubic yards, 70 cents per cubic yard, cost \$195,387.26.")

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

Construction Account—

McArthur Bros. (Sec. 2, Feb. 1, 1895).....	\$ 5,187 70
Gilman & Co. (Sec. 3, Feb. 1, 1895).....	3,691 41
McArthur Bros. (Sec. 4, Feb. 1, 1895).....	13,590 12

The Qualey Construction Co. (Sec. 5, Feb. 1, 1895).....	\$ 7,364 43-
Mason, Hoge & Co. (Sec. 6, Feb. 1, 1895).....	12,010 69
Mason, Hoge & Co. (Sec. 7, Feb. 1, 1895).....	9,325 31
Mason, Hoge, King & Co. (Sec. 8, Feb. 1, 1895).....	12,819 63
Halvorson, Richards & Co. (Sec. 9, Feb. 1, 1895).....	19,647 95
E. D. Smith & Co. (Sec. 10, Feb. 1, 1895).....	12,670 00
Mason, Hoge & Co. (Sec. 11, Feb. 1, 1895).....	6,518 31
Mason, Hoge & Co. (Sec. 12, Feb. 1, 1895).....	13,105 97
Mason, Hoge & Co. (Sec. 13, Feb. 1, 1895).....	5,232 50
Smith & Eastman (Sec. 14, Feb. 1, 1895).....	10,731 00
Wright, Meysenburg, Sinclair & Carry (Sec. 15, Feb. 1, 1895).....	1,548 75
Heldmaier & Neu (Sec. A, Feb. 1, 1895).....	2,541 68
Heldmaier & Neu (Sec. B, Feb. 1, 1895).....	3,335 14
E. D. Smith & Co. (Sec. D, Feb. 1, 1895).....	2,019 73
Angus & Gindele (Sec. E, Feb. 1, 1895).....	1,209 83
Gahan & Byrne (Sec. H, Feb. 1, 1895).....	529 32
Christie & Lowe, (Sec. I, Feb. 1, 1895).....	3,922 19
Christie & Lowe, (Sec. K, Feb. 1, 1895).....	293 13
The Heidenreich Co. (Sec. L, Feb. 1, 1895).....	2,396 01
The Heidenreich Co. (Sec. M, Feb. 1, 1895).....	531 65
Mason, Hoge & Co., (Sec. 6, extra-special work—retaining embankment and repairing and raising levee, Feb. 1, 1895)....	1,105 00
Heldmaier & Neu, (Sec. A, extra work, completing levee, 692 to 710 and below 710, Feb. 1, 1895).....	126 00
Heldmaier & Neu, (Sec. A, extra work, revetting levee, 671-692, Feb. 1, 1895, final)....	420 60
Heldmaier & Neu, (Sec. B, extra work, revetment of levee, 656-660, Feb. 1, 1895, final)....	218 00
	<hr/> \$152,192 05

ENGINEERING DEPARTMENT.

Isham Randolph, (post-age stamps).....	\$ 40 00
Hibbard, Spencer, Bartlett & Co., (lamps)...	6 67
H. S. Norton, (rent—Lemont, January, 1895).....	18 00

O. W. Moon, (rent—Lockport, January, 1895).....	\$ 20 00
Hiram A. Miller, (traveling).....	17 78
E. R. Shnable, (traveling).....	13 42
	<hr/> \$115 87

LAW DEPARTMENT.

Jos. Donnersberger, (right of way services, January, 1895)...	\$ 300 00
Frank Vander Bogart, Clerk, (court costs)...	265 90
Frank Vander Bogart, Clerk, (court costs)...	5 00
E. B. Myers & Co., (law books).....	7 50
Wright, Meysenburg, Sinclair & Carry, (test pits).....	6 55
	<hr/> \$584 95

GENERAL ACCOUNT.

John F. Higgins (printing proceedings, etc., January, 1895).....	\$ 494 18
Hibbard, Spencer, Bartlett & Co., (cuspidores).....	1 25
The Tobey Furniture Co. (stools).....	1 80
A., T. & S. Fe R. K. Co., (train for Legislative inspection trip)	125 00
P. M. Schwarz & Co., (supplies for Legislative inspection trip)...	120 00
Burton F. White, (supplies for Legislative inspection trip).....	274 00
Drake, Parker & Co., (expense, Legislative inspection trip).....	559 65
Wm. Martin, (expense).....	30 72
Thos. F. Judge, (payroll and sundry expense).....	30 78
	<hr/> \$1,637 38

POLICE DEPARTMENT.

Hibbard, Spencer, Bartlett & Co., (brooms)...	\$ 7 50
Standard Oil Co., (oil).....	7 42
	<hr/> \$ 14 92
Grand total.....	<hr/> \$154,545 17

Mr. Eckhart, seconded by Mr. Russell, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and the

vouchers, as read and shown above, approved and ordered paid.

REQUISITIONS.

The Clerk presented the following requisitions:

No. 712, Treasury Department, (sundries).....	\$ 23 75
No. 935, Police Department, (oil)	20 00
Total.....	<u>\$ 43 75</u>

Mr. Boldenweck, seconded by Mr. Eckhart, moved that Requisitions No. 712, for the Treasury Department, and No. 935, for the Police Department, as read and shown above, be allowed.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and Requisitions No. 712, for the Treasury Department, and No. 935, for the Police Department, as read and shown above, allowed.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending February 9, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, February 13, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending February 9, 1895, as the same have been reported to me:

Engineering Department.....	102
Clerical Department.....	4
Law Department.....	8
Treasury Department.....	1
Police Department.....	48
Telephone operator.....	1
Towpath force.....	2
Total employes.....	<u>166</u>

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk.”

MONTHLY REPORT FROM CLERICAL DEPARTMENT.

The Clerk presented a report from the Clerical Department for the month of January, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, Feb. 13, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have the honor to herewith report that the total amount expended on account of and charged to the Clerical Department during the month of January, 1895, was \$935.67, divided as follows:

Salaries	\$891 67
Stationery.....	16 00
Fixtures.....	23 00
General expenses.....	5 00
Total.....	<u>\$935 67</u>

There are no outstanding liabilities, and the expenses for the present month will, from present indications, be about \$950.

The total amount expended and charged to the General Account during the month of January, 1895, was \$6,189.61, divided as follows:

Salaries.....	\$2,568 34
Printing.....	144 49
Advertising.....	592 09
Electric lighting.....	80 27
Telephone service.....	764 17
Vaccine points.....	90 00
Rent.....	1,875 00
Furniture.....	75 25
Total.....	<u>\$6,189 61</u>

There are no outstanding liabilities against the General Account, and the expenses for the present month will be about \$7,000.

During the month of January, 1895, there were warrants authorized and drawn against the various accounts for \$553,156.75, as follows:

Engineering Department.....	\$ 1,354 32
Clerical Department.....	935 67
Law Department.....	3,958 95

Treasury Department.....	166 67
General Account.....	6,189 61
Engineering Department (Construction Account).....	518,247 63
Law Department (Land Acct.).	21,666 50
Police Department.....	637 40
Total.....	\$553,156 75

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

CLERK'S FINAL REPORT ON DELIVERY OF
AND PAYMENT FOR \$4 000 000 BONDS
—FOURTH ISSUE.

The Clerk presented a final report with reference to the completion and delivery of the \$4,000,000 of 4½ per cent bonds of the District, being the fourth issue, and payment therefor by the New York Life Insurance Company, and the return to each of the bidders of the checks deposited with their bids for the purchase of said issue of bonds on January 9, 1895, said report being accompanied by receipt from the Treasurer for said bonds, and notice of payment for same, together with eleven (11) receipts.

The report was read, and, by unanimous consent, with accompanying receipt, was ordered printed, and, with all other enclosures, placed on file.

The following is

THE REPORT, WITH ACCOMPANYING RECEIPT:

"CHICAGO, Feb. 13, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—I have the honor to report that on February 5, 1895, I delivered to Melville E. Stone, Treasurer of the District, as shown by receipt transmitted herewith, the entire issue of \$4,000,000 of 4½ per cent bonds of the District, being the fourth issue, signed by the President and Clerk and sealed with the seal of the District, completed and ready for delivery to the purchasers, the New York Life Insurance Company, the same being the bonds issued under ordinance of January 11, 1895, (page 2428 of the Proceedings); and that on written notice from the Treasurer, transmitted herewith, dated February 7, 1895, of the payment for and delivery of all of said fourth issue of bonds, I returned to the said New York Life Insurance Company, the entire amount of the deposit made with their bid for said bonds, receipt for the same being hereto attached.

I have also returned to the State Savings Bank of St. Paul, the Illinois Trust and Savings Bank, Mason, Lewis & Company, J. & W. Seligman & Company, N. W. Harris & Company, E. H. Gay & Company and Farson, Leach & Company, the checks deposited by each of the said parties on January 9, 1895, with their bids for the said fourth issue of bonds, and their receipts for said checks are attached hereto.

All of said action being in conformity with the report of the Committee on Finance presented and adopted at the meeting held January 11, 1895, (page 2430 of the Proceedings).

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

(13 enclosures.)

"CHICAGO, Feb. 5, 1895.

Received of Thos. F. Judge, Clerk of the Sanitary District of Chicago, four thousand (4,000) signed and sealed four and one-half per cent (4½ %) bonds, for the sum of one thousand (\$1,000) dollars each, of the Sanitary District of Chicago, numbered from No. 8001, to No. 12000, consecutively, with interest coupons attached, and maturing as follows:

Nos. 8001 to 8200,	January 1, 1896.
Nos. 8201 to 8400,	January 1, 1897.
Nos. 8401 to 8600,	January 1, 1898.
Nos. 8601 to 8800,	January 1, 1899.
Nos. 8801 to 9000,	January 1, 1900.
Nos. 9001 to 9200,	January 1, 1901.
Nos. 9201 to 9400,	January 1, 1902.
Nos. 9401 to 9600,	January 1, 1903.
Nos. 9601 to 9800,	January 1, 1904.
Nos. 9801 to 10000,	January 1, 1905.
Nos. 10001 to 10200,	January 1, 1906.
Nos. 10201 to 10400,	January 1, 1907.
Nos. 10401 to 10600,	January 1, 1908.
Nos. 10601 to 10800,	January 1, 1909.
Nos. 10801 to 11000,	January 1, 1910.
Nos. 11001 to 11200,	January 1, 1911.
Nos. 11201 to 11400,	January 1, 1912.
Nos. 11401 to 11600,	January 1, 1913.
Nos. 11601 to 11800,	January 1, 1914.
Nos. 11801 to 12000,	January 1, 1915.

The same being the entire issue of four million (\$4,000,000) dollars of District bonds, (fourth issue) issued under ordinance of January 11, 1895, and being completed and ready for delivery.

(Signed) MELVILLE E. STONE,
Treasurer of Sanitary District of Chicago.

By W. G. STANFORD,
Assistant Treasurer."

(\$4,000,000 in bonds.)

REPORT ON SALE OF BORING MACHINE.

The Clerk presented a report from the Chief Engineer, accompanied by check (\$100), with reference to the sale of and payment for well boring machine belonging to the District, and set forth in the report; and the report was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed and placed on file, the action of the Chief Engineer approved, and the accompanying check (\$100) ordered deposited with the Treasurer to the credit of the District and Engineering Department Account thereof.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, the action of the Chief Engineer approved, and the accompanying check (\$100) ordered deposited with the Treasurer to the credit of the District and the Engineering Department Account thereof.

The following is

THE REPORT:

"CHICAGO, Feb. 13, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—On Saturday last I sold one of the well boring machines belonging to this District for the sum of \$100.00 to M. V. B. Spaulding. This was done after advising with the President and the Chairman of the Finance and Engineering Committee, who thought it proper to dispose of the machine, which was out of use and depreciating in value. I herewith transmit my check for the amount received (\$100.00).

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."
(Accompanied by check, \$100.)

MONTHLY REPORT FROM LAW DEPARTMENT.

The Clerk presented a report from the Law Department for the month of January, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, Feb. 13th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I submit herewith the monthly report for January, 1895. The total amount paid out by this Department during the month is as follows:

EXPENSE OF LAW DEPARTMENT FOR THE MONTH OF JANUARY, 1895.

Salaries.

Attorneys..... \$333 33

General Expenses.

Court costs.....	\$1,346 33
Right of way.....	451 50
Expense account.....	530 31
Legal services.....	1,250 00
Printing and stationery	42 13
Sundries.....	5 35
	————— \$3,625 62

Land Account.

Right of way (for which deeds have passed)...	\$21,666 50
Total.....	<u>\$25,625 45</u>

In the matter of the condemnation suit for what are known as the Allen and Loughran lands, the acquisition of the tracts owned by Allen has been completed by the deposit with the County Treasurer of Will County of the amount of the verdict.

The motion for a new trial in regard to the Loughran tracts was denied, an appeal prayed and allowed and the bill of exceptions is being prepared.

Notice was served upon me by the Attorneys of Carl Moll and John A. Lomax, respondents in our condemnation suit for lands on Sag Island, of an application to Judge Kellum at Sycamore, Illinois, for an injunction restraining the District and its contractors from proceeding farther with the work of excavation over and across said lands. At the same time and place a change of venue was asked on account of alleged prejudice of the people of DuPage County and of two of the Judges in that Circuit.

The motions were heard and argued January 26, 1895. The applications for injunction were denied in each case. The petition for change of venue was taken under consideration by the Judge and has not yet been decided.

The contract for the completion of the work on Section "F," the same having been let to the lowest bidder, has been prepared and executed. Also the agreement for the purchase of bonds pursuant to the action of the Board upon the bids for same.

A bill has been prepared and filed for the reformation of two deeds in which the description was such that a portion of the land intended to be conveyed was not included in the description. The land is claimed by the District under its deed from Griffin & Connelly.

The trial of the suit of the District vs. Livingston, preparation for the condemnation suits in DuPage and Will Counties and routine work will occupy the Department for the coming month.

Respectfully submitted,

(Signed) GEO. E. DAWSON,
Attorney."

APPOINTMENT OF ASSISTANT TREASURER.

The Clerk presented a report from the Treasurer, stating that he appointed Mr. Alfred B. Cleghorn as Assistant Treasurer, vice Mr. W. G. Stanford, resigned; and the report was read.

Mr. Eckhart, seconded by Mr. Gilmore, moved that the report be ordered printed and placed on file, and the appointment of Mr. Alfred B. Cleghorn, as Assistant Treasurer, as provided therein, confirmed.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed and placed on file, and the appointment of Mr. Alfred B. Cleghorn, as Assistant Treasurer, as provided therein, confirmed.

The following is

THE REPORT:

"CHICAGO, Feb. 6, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg to advise you that I have appointed Mr. Alfred B. Cleghorn as my assistant in the Treasury Department of your service, vice W. G. Stanford, who retires from that position.

This is done under the general resolution of the Board of date February 3d, 1892, authorizing the appointment of such assistant. The compensation is fixed at \$2,000.00* a year.

Respectfully yours,

(Signed) MELVILLE E. STONE,
Treasurer, Sanitary District."

REPORT ON REQUISITION FOR ADDITIONAL MAN FOR SPECIAL SERVICE.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by a report from the Chief Engineer, making requisition for additional man for special service, presented and referred to that Committee at the meeting held February 6, 1895 (page 2528 of the Proceedings), recommending that the authority asked for therein be granted under conditions as provided in the report of the Committee; and the report was read.

Mr. Cooley, seconded by Mr. Eckhart, moved that the report be adopted, ordered printed and with enclosure, placed on file, and the recommendations made in the report of the Committee concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and, with enclosure, placed on file, and the recommendations made in the report of the Committee concurred in.

The following is

THE REPORT:

"CHICAGO, February 13, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In regard to the report of the Chief Engineer, making requisition for an additional employe on special service, at a rate of pay not exceeding \$75.00 per month, presented and referred to this Committee at the meeting held February 6, 1895, (page 2528 of the Proceedings) your Committee recommends that the request be granted, provided the time of such special service does not extend beyond May 31, 1895.

The report of the Chief Engineer is returned herewith for filing.

Respectfully submitted,

(Signed) L. E. COOLEY,
Chairman.

B. A. ECKHART,
WM. BOLDENWECK,
JOHN J. ALTPETER,
W. H. RUSSELL,

Joint Committee on Engineering and Finance."

(One (1) enclosure.)

REQUEST FOR ADDITIONAL RIGHT OF WAY ON SECTIONS G AND H.

The Clerk presented a communication from Gahan & Byrne, contractors for Sections G and H, with reference to the securing of additional right of way on said sections at the Santa Fe crossing, as set forth in the communication; and the communication was read.

Mr. Cooley, seconded by Mr. Boldenweck, moved that the communication be ordered printed and referred to the Joint Committee on Finance and Engineering.

The motion prevailed unanimously, and the communication was ordered printed and so referred.

The following is

THE REPORT:

The following is

THE COMMUNICATION:

"CHICAGO, Ill., Jan. 30, 1895.

Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In accordance with the contract heretofore entered into between the Sanitary District of Chicago and ourselves, we have entered upon the execution of the excavation of the material upon Sections G and H of the Main Drainage Channel of said District. We have reached a point in the excavation of such work where it is necessary that we should have possession of all the right of way on said Sections G and H. We will soon be up to the point where

the Santa Fe R. R. crosses Sections G and H.

It will be necessary in order for us to do this work economically and for the price that we bid for the same, to have possession at once of the land now occupied by the Santa Fe R. R. for its right of way on said Sections G and H. We therefore desire to notify you of the foregoing facts and to request of you that you give to us immediate possession of the entire right of way of said Sections G and H, free and clear of any obstructions, and particularly free and clear from the obstruction of the tracks and right of way of the Santa Fe R. R. Co., as the same now exists across said Sections G and H.

If we are not able to get this part of said Sections G and H in time to excavate the same as we are doing the work on other parts of said sections, it will cost us a great deal more to excavate that portion of the work occupied by the Santa Fe across said sections, and we shall expect that the Sanitary District will reimburse us for any such extra cost caused by the failure of said District to deliver to us the possession of the land in time for us to do the work in the manner that we are now proceeding to do the same.

Yours very respectfully,

(Signed) GAHAN & BYRNE."

APPOINTMENT OF SPECIAL COMMITTEE ON LEGISLATION.

The President announced that in conformity with the recommendations contained in the report of the Joint Committee on Engineering and Finance, adopted at the meeting held February 6, 1895, (page 2543 of the Proceedings) he had appointed as a Special Committee on Legislation, Messrs. Eckhart, Cooley and Boldenweck.

ADJOURNMENT.

On motion of Mr. Eckhart, seconded by Mr. Boldenweck, the Board then adjourned.

THOS. F. JUDGE,
Clerk.

February 13,]

—2555—

{1895.

PROCEEDINGS

—OF THE—

BOARD OF TRUSTEES

—OF THE—

SANITARY DISTRICT OF CHICAGO.

FEBRUARY 20, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and sixty-first regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, February 20, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Russell and Wenter—seven (7) members, were present.

MINUTES.

The minutes of the regular meeting held February 13, 1895, were approved

as printed, on motion of Mr. Boldenweck, seconded by Mr. Russell.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending February 16, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, February 20, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending Febru-

ary 16, 1895, as the same have been reported to me:

Engineering Department.....	103
Clerical Department.....	4
Law Department.....	8
Treasury Department.....	1
Police Department.....	48
Telephone operator.....	1
Towpath force.....	1

Total employees..... 166

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

MONTHLY REPORT FROM ENGINEERING DEPARTMENT.

The Clerk presented a report from the Engineering Department (accompanied by classified statement) for the month of January, 1895.

The same was read, and, by unanimous consent, was ordered printed, and, with accompanying classified statement, placed on file.

The following is

THE REPORT:

"CHICAGO, Feb. 20, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I herewith transmit the reports of the Divisions of Construction and Drafting and Designing, showing the detailed operations of the Engineering Department for the month of January, 1895; also a classified statement of expenses in the usual form.

The expenses for the month of January were as follows:

Salaries	\$ 16,393.66
Supplies, etc.....	627.19
Regular contractor's estimates.	349,904.35
Extra contractor's estimates...	2,311.03
Total.....	<u>\$369,236.23</u>

I estimate the expenses of this Department for the month of February will be \$230,000.00.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,

Chief Engineer."

(Accompanied by classified statement.)

"CHICAGO, Feb. 16, 1895.

Isham Randolph, Esq., Chief Engineer:

DEAR SIR—I herewith present my re-

port of the work of construction for the month of January, appending thereto the usual tabulated statements.

SECTIONS O AND N.

No work was done on these sections during the month, the dredge having been laid up for the winter.

SECTIONS M AND L.

On these sections work was continued with four steam shovels and inclines, two of which worked night shifts also a part of the time. The severe cold weather not only caused frequent suspension of the work, but also contributed largely towards lessening the output, which amounted to 71,700 cubic yards for 120½ shifts, an average of 595 cubic yards per day for each shovel. This is equal to 79 per cent for Section M and 111 per cent for Section L.

SECTIONS K AND I.

The most of the work on these sections was done with three steam shovels, in connection with inclines and truss bridges. Two of the shovels worked on Section I and one on Section K. The other steam shovel, working on the first cut on Section K, had to suspend operations on the 5th, owing to the bad condition of the boiler, which has become worn out, and a new one has been ordered to take its place. On January 26th, owing to the continued severity of the weather, all work was suspended and will not be resumed until the weather moderates, meantime the whole plant is being overhauled and put in good condition. The total yardage excavated during the month was 66,300, an average of 557 yards per day for each shovel for the 119 shifts worked, and gives Section K 46 per cent and Section I 98 per cent.

SECTIONS H AND G.

In addition to the inclement weather, one of these sections (H) has again been visited with a serious accident in the destruction of the immense Cantilever Conveyor, just about the time that the repairs of the previous accident (November 8th) were completed. The main truss of this conveyor spanned the Channel (320 feet), the ends supported by trucks resting on a track system on each side of the Channel upon which it was to be moved along as the excavation progressed. Extending outward from these trucks on either end of the main span were cantilever arms—one 172 feet and the other 148 feet long, making its total length 640 feet. Owing to the trucks being insecurely chuck blocked,

or anchored to the track during the violent gale that prevailed, on the morning of January 21st, the entire structure was blown for some distance to the end of the tracks where the lead trucks on each side ran off, overturning the whole apparatus, and completely wrecking both of the cantilever arms. The main truss, however, landed on its side and is apparently but little damaged.

It will be remembered that on April 7th, 1893, the first Brown Cantilever erected on Section 13 for handling solid rock was totally destroyed in a similar manner and from the same cause.

Ill fate seems to have pursued Section H to an unusual degree, but with equal persistence the contractors declare their intention to pick up and rebuild the fallen cantilever as soon as proper material can be procured, and to also provide sufficient additional plant to insure full progress. To that end they are now building inclines somewhat similar in construction to those now in successful use on Sections M and L, which they expect to have ready for operation by the time the weather will permit a resumption of work, and while this section is between six and seven months in arrears, with no prospect of further work until released from its present frost bound state, I do not regard its condition as at all serious. In this connection I may suggest that during the past season progress has been made on neighboring sections at such rate as would cover the present deficiency on this one within less than ninety days.

Section G stood about up to the progress requirement at the end of the month, but will doubtless fall behind to an extent depending upon the duration of the cold season. The total output on the two sections for the month was 20,963 cubic yards, which was handled with four steam shovels that averaged from about 250 to 360 yards each per day worked, giving 11 per cent to Section H, and 29 per cent to Section G.

SECTION F.

This section was relet on January 28th with progress rating to commence March 1st, 1895.

SECTION E.

The same equipment was employed on this section as during the preceding month, viz.: Two steam shovels, four locomotives, forty dump cars, four steam pumps, one dynamo, etc. The two steam shovels worked sixty-one ten-hour shifts, averaging about 242 yards per shift; the

total output being 14,767 cubic yards, which is equal to 17 per cent of the monthly requirement.

SECTION D.

On account of heavy frost the third shovel (loading wagons) was shut down January 24th. The other two worked at great disadvantage due to the same cause. The total yardage excavated during the month was 29,859 cubic yards—equal to 41 per cent—in which the steam shovels averaged 427 yards each per day.

SECTION C.

On January 26th both the steam shovels on this section were laid up on account of the material being so deeply frozen. The team forces worked a few days at a time, but made little progress. The output for the month was 20,476 yards (equal to 36 per cent), in which the two steam shovels averaged 266 yards each per day for the time employed.

SECTIONS B AND A.

About 28,600 cubic yards were excavated on Section B, of which amount 12,600 yards were handled by two steam shovels in forty-six shifts of ten hours each, an average of 274 yards per shift. Five thousand yards were taken out by wheel-barrow gangs, and 11,000 with cars loaded by manual labor.

No work was done on Section A during the month, but close measurements made after the completion of dredging operations credits the section with 13,404 cubic yards for work previously done.

The River Diversion Levee received about 6,600 cubic yards hauled from Section B, and 10,000 cubic yards brought from Section 1, Main Channel.

SECTION 1.

In the semi monthly estimate returned January 16th, 22,200 cubic yards were allowed on this section, but owing to snow and ice over the work on the 1st instant it was impossible to obtain reliable measurements, and hence no return was made for the last half of the month. Four steam shovels were employed in 103 shifts, averaging about 215 yards each per shift.

Preparations were made for rock excavation, and a few carloads were taken out. Some channelling was also done.

SECTION 2.

Up to January 12th, 13,100 cubic yards of glacial drift were excavated with three steam shovels and one cableway,

when all earth work was abandoned on account of severe frost.

The steam shovels worked twenty-seven shifts, averaging about 300 yards each, and the cableway eighteen shifts, with an average of 272 yards.

The output of solid rock was 19,200 cubic yards, of which 1,800 yards were taken out with car gangs, and the balance, 17,400 yards, with two cableways in seventy-six shifts, averaging about 230 yards each per shift. The total value of work done equaled 105 per cent of the progress requirement.

SECTION 3.

One steam shovel was employed seventeen days in glacial drift, moving 4,000 cubic yards, an average of 235 yards per day.

In solid rock, 2,500 yards were moved with dump cars, and 27,800 yards with four cableways, which were employed 173 shifts, averaging 161 yards each per shift. The value of the work done equals 86 per cent of the monthly rating.

SECTION 4.

Four steam shovels moved 45,200 yards of glacial drift in eighty-nine shifts, which is an average of about 508 yards per shift. About 700 yards were taken out with a small car and shovel gang, making a total of 45,900 yards of glacial drift.

Two cableways were engaged in solid rock, moving 7,700 cubic yards in 39 shifts, an average of about 198 yards each.

The value of the work done is 125 per cent of the monthly requirement.

SECTION 5.

This section shows an output of 10,000 cubic yards of glacial drift, which was handled by two steam shovels in twenty-nine shifts, an average of about 345 yards each per shift. All earth work was abandoned on the 26th, on account of unfavorable weather.

The solid rock excavation amounted to 13,600 cubic yards, of which 5,588 yards were taken out with two steam hoists in forty-nine and nine-tenths shifts, an average of 112 yards each, and the balance, 8,012 yards, with a cableway in twenty-nine and one-tenth shifts, an average of about 275 yards per shift.

The value of the work done represents 71 per cent of the monthly requirements.

SECTION 6.

Eight thousand five hundred cubic yards of glacial drift were moved with two steam shovels, which averaged about 392 yards per day each for the twenty-one and seven-tenths days that they were employed.

Four cableways were engaged in solid rock excavation, their output being 29,500 cubic yards in the seventy-nine and eight-tenths days worked, giving a daily average of about 370 yards each.

The total value of the work done is 89 per cent of the monthly rating.

SECTION 7.

Owing to various causes the entire plant of this section was employed only about three-fifths of the time during the month. It is credited with an output of 22,900 cubic yards of solid rock and the value of the work done amounts to 66 per cent of the monthly rating. This leaves the standing of the section on the 1st inst. but about two weeks behind the full progress requirement on that date.

SECTION 8.

Five cableways were employed on this section a total of ninety-nine and two-tenths days, producing an output of 41,400 cubic yards of solid rock, an average of 417 yards each per day. This is equal to 142 per cent of the monthly rating, and brings the section up to within about thirty days of the full progress on the 1st inst.

SECTION 9.

During the month of January this section converted its deficiency into a surplus, with an estimate of 53,300 cubic yards of solid rock, equal to 212 per cent of the required monthly progress rate.

SECTION 10.

Is credited with an estimate of 36,700 cubic yards, which is 131 per cent of the monthly requirement, and places the section 186,230 yards in advance of its full progress rating on the 1st inst.

SECTIONS 11, 12 AND 13.

These sections are practically operated as one contract and equipped as such. On the 1st inst. they showed an aggregate surplus over the contract progress requirement of about 214,000 cubic yards and their completion may be safely relied on during the current year. The same may also be said of the four preceding sections.

SECTION 14.

Five of the six double derricks on this

section have been in service off and on during the month, the period of continuous service being equal to about three derricks for the whole month of twenty-six days. It is probable, however, that with more favorable weather much better results would have been attained. The Incline with steam hoist was also in operation and a small team force was also employed in opening a pit where another incline with steam hoist is now being erected.

The double derricks were operated a total of 162 8-10 days, taking out 30,180 cubic yards of solid rock, an average of 185 yards each per day of ten hours. The Incline took out 3,100 yards in twenty-two and eight-tenth days averaging 136 yards per day; 1,820 cubic yards were handled with teams and wagons, making the total output 35,100 yards of solid rock, equal to 113 per cent of the monthly requirement.

SECTION 15.

Two steam shovels were used on this section loading rock (after having been

blasted) on dump cars which were hauled out of the pit with a steam hoist. These shovels handled 6,700 yards of solid rock in forty-two days, an average of 160 yards each per day. The value of the work done equals 17 per cent of the monthly requirement. The contractors say they intend to put in another steam shovel and three locomotives as soon as the first cut is made.

Notwithstanding the severely cold and stormy weather during the latter part of the month, the result as a whole (amounting in value to \$401,634.92) is much better than could be expected at this season of the year. The continued severity of the weather at this writing has compelled the suspension of earth work on all but one section and but little progress may be expected during the current month.

Respectfully submitted,

(Signed)

U. W. WESTON,

Superintendent of Construction."

STATEMENT SHOWING THE AMOUNT OF WORK DONE DURING THE
MONTH OF JANUARY, 1895—(MAIN CHANNEL).

SECTIONS.	Amount Done During January.	Average Monthly Requirement.	Deficiency for January.	Excess Over Monthly Requirement.	Per Cent. of Monthly Requirement.
O.....		\$13,271 42	\$13,271 42		00
N.....		10 674 33	10 674 33		00
M.....	\$ 4 947 60	6 274 34	1 325 74		79
L.....	9,633 30	8,682 82		\$ 950 48	111
K.....	5,350 00	11,559 57	6,209 57		46
I.....	11,225 00	11,398 49	173 49		98
H.....	1,413 46	12,493 57	11,080 11		11
G.....	4,506 32	15,277 64	10,771 32		29
F.....					00
E.....	3 987 09	23 230 53	19 243 44		17
D.....	7,893 97	19 215 65	11 321 68		41
C.....	4,811 86	13,443 10	8 631 24		36
B.....	7,750 89	12,901 32	5 150 43		60
A.....	4 104 97	24 012 30	19 907 33		17
1.....	9,523 80	44 801 03	35,277 23		21
2.....	21,945 30	20 950 88		994 42	105
3.....	25,235 32	29 177 70	3 942 38		86
4.....	28,624 35	22 982 67		5 641 68	125
5.....	13,096 00	18 387 51	5 291 51		71
6.....	23,977 50	26 827 41	2 849 91		89
7.....	16,831 50	25 622 15	8 790 65		66
8.....	30,946 50	21 799 22		9 147 28	142
9.....	40 987 70	19 325 00		21 662 70	212
10.....	29,360 00	22 458 34		6 901 66	131
11.....	16,087 75	19 455 05	3 367 30		83
12.....	33,839 75	20 413 93		13 425 82	166
13.....	13,006 50	21 140 02	8 133 52		62
14.....	25 623 00	22 648 61		2 974 39	113
15.....	3,953 00	23,607 65	19 654 65		17
Totals.....	\$398,662 43	\$542,032 25	\$205,068 25	\$61,698 43	73 55-100

TABLE OF AMOUNT OF WORK DONE (INCLUDING RIVER DIVER

SECTIONS.	CONTRACTORS.	MAIN CHANNEL.		RIVER DIVERSION.		RUBBLE MASONRY.
		<i>Glacial Drift.</i>	<i>Solid Rock.</i>	<i>Glacial Drift.</i>	<i>Solid Rock.</i>	
		Cubic Yds.	Cubic Yds.	Cubic Yds.	Cubic Yds.	
O	McMahon & Montgomery Co. et al.	518,821	.....	7,600	.....	.....
N	Hayes Bros. et al.	71,300	.....	.....	.....	.....
M	The Heidenreich Co.	366,600	.....	.....	.....	.....
L	The Heidenreich Co.	507,000	.....	.....	.....	.....
K	Christie & Lowe	436,000	.....	.....	.....	.....
1	Christie & Lowe	725,300	.....	.....	.....	.....
H	Gahan & Byrne	146,318	.....	.....	.....	.....
G	Gahan & Byrne	544,000	.....	.....	.....	.....
F	Weir, McKechney & Co.	504,293	.....	168,234	.....	.....
E	Angus & Gindele	533,149	.....	95,718	.....	.....
D	E. D. Smith & Co.	1,147,731	.....	.....	.....	.....
C	Western Dredging & Imp. Co.	813,463	.....	162,537	.....	.....
B	Heldmaier & Neu	629,184	.....	211,126	.....	.....
A	Heldmaier & Neu	872,726	.....	128,238	.....	.....
1	Griffiths & McDermott	445,366	.....	5,876	.....	.....
2	McArthur Bros.	589,680	51,453	29,516	.....	.....
3	Gilman & Co.	355,288	230,609	.....	.....	.....
4	McArthur Bros.	718,754	14,173	.....	.....	.....
5	The Qualey Construction Co.	577,000	28,700	.....	.....	1,300
6	Mason, Hoge & Co.	549,400	72,600	112,700	.....	1,300
7	Mason, Hoge & Co.	169,600	386,300	97,000	41,800	.....
8	Mason, Hoge, King & Co.	41,600	665,400	56,600	96,900	.....
9	Halvorson, Richards & Co.	71,700	621,700	37,700	16,000	.....
10	E. D. Smith & Co.	29,200	884,900	27,400	56,500	.....
11	Mason, Hoge & Co.	44,032	655,600	5,756	11,483	.....
12	Mason, Hoge & Co.	27,400	665,200	11,739	.....	.....
13	Mason, Hoge & Co.	32,822	891,100	.....	.....	.....
14	Smith & Eastman	843,700	330,900	.....	.....	.....
15	Wright, Meysenburg, Sinclair & Carry	29,500	16,400	.....	.....	.....
Totals.....		11,840,927	5,513,035	1,147,790	222,683	2,600

Main Channel, glacial drift.....
 Main Channel, solid rock.....
 River Diversion, glacial drift.....
 River Diversion, solid rock.....
 Rubble Masonry.....

Total amount required to be done February 1st, 1895.....
 Total amount done February 1st, 1895.....

Total amount short as per contracts.....

Total value of work done under contracts February 1st, 1895.....
 Reserved..... { 12½ per cent.....
 { 10 per cent.....

Total value of vouchers paid, including those of February 1st, 1895.
 Total value of vouchers paid for collateral work, including those of

Total disbursement, Construction Account.....

NOTE.—*Overhaul to Levee—Section 1 not included.

SION) AND CONDITION OF WORK ON CONTRACTS FEB. 1ST, 1895.

Total value of work done to Feb. 1st, 1895, on each section.	Total value of work required to be done to Feb. 1st, 1895.	Amounts behind as per contracts.	Amounts ahead as per contracts.	Average monthly progress called for in contracts.	Average monthly progress necessary Jan. 1st, 1895, to time of completion.	Progress made during month of January, 1895.
\$110,464 81	\$129,294 00	\$ 18,829 19	.....	\$14,366 00	\$14,644 94	.....
16,399 00	96,068 97	79,669 97	.....	10,674 33	14,986 58	.....
79,552 20	62,743 40	.....	\$ 16,808 80	6,274 34	5,140 87	\$ 4,947 60
99,879 00	86,828 20	.....	13,050 80	8,682 82	7,926 55	9,633 30
109,000 00	115,595 70	6,595 70	.....	11,559 57	11,583 70	5,350 00
181,325 00	113,984 90	.....	67,340 10	11,398 49	7,178 89	11,225 00
42,432 22	124,935 70	82,503 48	.....	12,493 57	16,957 53	1,413 46
152,320 00	152,776 40	456 40	.....	15,277 64	14,632 96	4,506 32
157,350 16	157,350 16	.....	.....	.....	.....	.....
172,618 50	248,264 40	75,645 90	.....	23,230 53	26,990 69	3,987 09
303,431 38	365,097 35	61,665 97	.....	19,215 65	22,571 94	7,893 97
229,360 00	279,218 49	49,858 49	.....	14,695 71	17,360 69	4,811 86
226,883 70	278,114 02	51,230 32	.....	14,637 58	17,638 83	8,425 89
306,560 54	478,854 15	172,293 61	.....	25,202 35	35,435 74	6,402 46
*173,767 76	393,222 90	219,455 14	.....	44,801 03	55,635 03	9,523 80
337,738 38	507,659 04	169,920 66	.....	21,152 46	30,636 53	21,945 30
352,964 22	428,281 50	75,317 28	.....	29,177 70	33,936 03	25,235 32
352,837 40	574,566 75	221,729 35	.....	22,982 67	36,357 44	28,624 35
194,217 50	450,494 00	256,276 50	.....	18,387 51	32,729 52	13,096 00
235,148 00	325,667 17	90,519 17	.....	26,896 13	32,371 16	23,977 50
383,969 50	398,254 28	14,284 78	.....	25,699 42	26,037 97	16,831 50
593,856 25	623,454 78	29,598 53	.....	23,979 03	26,264 41	30,946 50
518,835 30	517,405 98	.....	1,429 32	19,900 23	21,128 85	40,987 70
767,270 00	618,286 50	.....	148,983 50	23,780 25	14,817 52	29,860 00
543,724 15	512,706 22	.....	31,017 93	19,719 47	17,553 87	16,087 75
539,010 55	533,014 04	.....	5,996 51	20,500 54	20,959 47	33,839 75
674,630 97	549,640 52	.....	124,990 45	21,140 02	12,819 77	13,006 50
344,233 00	588,863 86	244,630 86	.....	22,648 61	38,123 95	25,623 00
15,281 00	94,430 60	79,149 60	.....	23,607 65	27,107 35	3,953 00
\$8,215,060 49	\$9,805,073 98	\$1,999,630 90	\$409,617 41	\$552,081 80	\$639,528 76	\$401,634 92

Cubic Yards.

.....	11,840,927
.....	5,513,035
.....	1,147,790
.....	222,683
.....	2,600
.....	\$9 805,073 98
.....	8,215,060 49
.....	\$1,590 013 49
.....	\$8,215,060 49
.....	\$1,005,934 85
.....	138,833 76
.....	1,144,768 61
.....	\$7,070,291 88
February 1, 1895.....	†627,200 01
.....	\$7,697,491 89

†Overhaul to Levee—Section 1 included.

"CHICAGO, February 18, 1895.

Mr. Isham Randolph, Chief Engineer:

DEAR SIR—The work of the Division of Drafting and Designing for the month of January, 1895, was as follows:

The limit of the appropriation for the work having been reached, the special topographical party practically finished their work at the close of the month. Two hundred and seventy square miles were covered, spread over eleven townships. Three hundred and seventy-three lineal miles of levels were run.

The topographical survey along the Desplaines River has been carried as far as the new iron bridge across the river at Millsdale, about six miles below Brandon's road.

Systematic cross-sections of the river are taken, and the elevation of the rock surface determined. The notes covering 3.3 miles of this work have been reduced, checked and platted. Considerable work was done on plats and profiles of the Illinois and Michigan Canal and the Illinois River.

Considerable time was given to the consideration of questions and details pertaining to the Main Channel.

The work of preparing record photographs was continued, as was also the maintenance of water gauges.

The preparation of plans for regulating works, tail race and channel through Joliet were continued, though but little progress was made. This was due to the necessity of putting previous work in form of record, the recent reorganization of the force having led to a change in the personnel of some of the assistants engaged on the work. Better progress will be made during the coming month.

The work pertaining to drafting is summarized as follows, by Mr. Edgar Williams, Principal Assistant Engineer, in charge thereof: A map and profile of the proposed "A" railroad line from Corwith to Lemont; a plat of proposed railroad lines near the crossing of the Calumet Terminal Railroad; a map and description of two tracts in Sec. 22, T. 36 N., R. 10 E.; an estimate of the cost and quantity of material in a portion of the north levee at Summit and two of the two-inch topographical maps between Chicago and Joliet, one with colored topography and the other with the flow lines.

The tracings finished were as follows: Parts of Nos. 5 and 6 of the topograph-

ical maps through Joliet; right of way Tracts 33, 33a and 37, in Sec. 22, T. 36 N., R. 10 E.; Tracts 49 and 50 in the same Section 22; right of way tracts with description and acreages, in Secs. 33 and 34, T. 36 N., R. 10 E., and Secs. 3 and 4, T. 35 N., R. 10 E.; the island tract in the southeast part of Sec. 15, T. 36 N., R. 10 E.; the cross-sections of the Desplaines River at Joliet; the C., S. F. & C. Railway right of way map below Joliet for the field party; a diagram of the water levels of Lake Michigan and Huron (1836 to 1894), and six discharge diagrams.

Some time was used in preparing for the Navy Department two maps of the Illinois River, two canal charts, and two profiles of the Illinois River.

Work was continued on the map and tracing of the District map. The tracing of this map will be finished during the next month, so that the prints may be obtained.

The platting of the map of the lower Illinois valley, the three plat books and the progress profile were continued.

The expenses for February will be somewhat less than heretofore, owing to the reorganization of the Division.

Very respectfully,

(Signed) THOS. T. JOHNSTON,
Assistant Chief Engineer."

REQUISITION FOR ADDITIONAL EMPLOYEE FOR SPECIAL SERVICE.

The Clerk presented a report from the Chief Engineer, making requisition for one employee for special service, additional to those provided by the rules, as set forth in the report; and the report was read.

Mr. Boldenweck, seconded by Mr. Alt-peter, moved that the report be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously and the report was ordered printed and so referred.

The following is

THE REPORT:

"CHICAGO, Feb. 20, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I ask permission to make an addition of one to the special service, the pay to be fixed at \$60.00 per month.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

SECOND SUPPLEMENTAL BOND OF TREASURER.

The Clerk presented a report from the Treasurer, accompanied by his second supplemental bond in the sum of one million (\$1,000,000) dollars—making in all three million (\$3,000,000) dollars—with Messrs. James L. High, Eugene H. Pearson, Elbridge G. Keith, Edson Keith, George Schneider, Walter L. Peck, John A. King, John H. Witbeck, John R. Walsh and Fredolin Madlener as sureties; and the report was read.

Mr. Boldenweck, seconded by Mr. Russell, moved that this second supplemental bond be approved, the report adopted, ordered printed and, with the accompanying bond, placed on file.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, this second supplemental bond approved, the report adopted, ordered printed, and, with accompanying bond, placed on file.

The following is

THE REPORT:

“CHICAGO, February 19, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The funds in the hands of your Treasurer, at this time, exceed two million (\$2,000,000) dollars, the amount of bond filed with you, and I take pleasure, therefore, in sending herewith a second supplemental bond for the sum of one million (\$1,000,000) dollars, making three million (\$3,000,000) dollars in all.

Trusting this will be satisfactory, I am,

Sincerely yours,

(Signed) MELVILLE E. STONE,
Treasurer.”

(Accompanied by bond.)

OFFICES TO BE CLOSED ON “WASHINGTON’S BIRTHDAY.”

Mr. Russell presented an order directing that the offices of the District be ordered closed on Friday, February 22d, 1895, the same being “Washington’s

Birthday,” a legal holiday; and the order was read.

Mr. Russell, seconded by Mr. Altpeter, moved the adoption of the order.

The motion prevailed unanimously, and the President declared the order adopted and the offices of the District ordered closed, as provided therein.

The following is

THE ORDER:

“*Ordered*, That the offices of the Sanitary District of Chicago be and they are hereby ordered closed on Friday, February 22, 1895, the same being ‘Washington’s Birthday,’ a legal holiday.”

ORDER TO EXECUTE RENEWAL OF LEASE OF PRESENT OFFICES.

Mr. Eckhart presented an order authorizing and directing the President and Clerk to execute, on behalf of the District, a renewal of the lease of the present offices of the District in the Rialto Building, as provided in the order; and the order was read.

Mr. Eckhart, seconded by Mr. Gilmore, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the order adopted, and the President and Clerk authorized and directed as provided therein.

The following is

THE ORDER:

“*Ordered*, That the President and Clerk be and they are hereby authorized and directed to execute on the part of the District a renewal of the lease, as prepared by the Attorney, of the offices in the Rialto Building now occupied by it, for a term extending from May 1st, 1895 to April 30th, 1896.”

ADJOURNMENT.

On motion of Mr. Boldenweck, seconded by Mr. Russell, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

FEBRUARY 27, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and sixty-second regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, February 27, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Prendergast and Wenter—seven (7), and subsequently Mr. Russell, making a total of eight (8) members, were present.

MINUTES.

The minutes of the regular meeting

held February 20, 1895, were approved as printed, on motion of Mr. Eckhart, seconded by Mr. Boldenweck.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

Construction Account—

McArthur Bros. (Sec. 2, Feb. 16, 1895).....	\$ 7,172 89
Gilman & Co. (Sec. 3, Feb. 16, 1895).....	21,233 66
McArthur Bros. (Sec. 4, Feb. 16, 1895).....	10,361 87
The Qualey Construction Co. (Sec. 5, Feb. 16, 1895).....	3,815 44
Mason, Hoge & Co. (Sec. 6, Feb. 16, 1895)	4,244 63
Mason, Hoge & Co. (Sec. 7, Feb. 16, 1895)	2,701 13
Mason, Hoge, King & Co. (Sec. 8, Feb. 16, 1895).....	8,568 22

Halvorson, Richards & Co. (Sec. 9, Feb. 16, 1895).....	\$16,149 00
E. D. Smith & Co. (Sec. 10, Feb. 16, 1895).....	8,470 00
Mason, Hoge & Co. (Sec. 11, Feb. 16, 1895).....	3,952 59
Mason, Hoge & Co. (Sec. 12, Feb. 16, 1895).....	5,686 19
Mason, Hoge & Co. (Sec. 13, Feb. 16, 1895).....	784 87
Smith & Eastman (Sec. 14, Feb. 16, 1895).....	8,623 13
Wright, Meysenburg, Sinclair & Carry (Sec. 15, Feb. 16, 1895).....	2,013 38
Heldmaier & Neu (Sec. B, Feb. 16, 1895).....	744 19
E. D. Smith & Co. (Sec. D, Feb. 16, 1895).....	1,781 23
Gahan & Byrne (Sec. H, Feb. 16, 1895).....	274 05
The Heidenreich Co. (Sec. L, Feb. 16, 1895).....	2,723 53
The Heidenreich Co. (Sec. M, Feb. 16, 1895).....	1,234 19
	<hr/> \$110,534 19

ENGINEERING DEPARTMENT.

John Larney, (coal)...	\$ 6 00
J. M. Abbitt, (coal)...	38 23
Seelig & Kandler, (repairing levels).....	4 75
Chas. L. Harrison, (traveling).....	16 96
W. T. Keating, (traveling).....	37 56
Geo. H. Cook, (traveling).....	16 40
	<hr/> \$ 119 90

CLERICAL DEPARTMENT.

C. F. W. Junge, (postage stamps).....	\$ 30 00
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GENERAL ACCOUNT.

Chicago Edison Co. (electric lighting)...	\$ 58 29
J. V. Northam & Co. (supplies for Legislative inspection trip).....	307 78
	<hr/> \$ 366 07
Grand total.....	<hr/> \$111,050 16

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

REQUISITIONS.

The Clerk presented the following requisition:

No. 520, Engineering Department, (printing)..... \$ 25 00

Mr. Eckhart, seconded by Mr. Boldenweck, moved that Requisition No. 520, for the Engineering Department, as read and shown above, be allowed.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, and Requisition No. 520, for the Engineering Department, as read and shown above, allowed.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending February 23, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, February 27, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employees in each department for the week ending February 23, 1895, as the same have been reported to me:

Engineering Department.....	105
Clerical Department.....	4
Law Department.....	8
Treasury Department.....	1
Police Department.....	48
Telephone operator.....	1
Towpath force.....	2

Total employees..... 169

Respectfully submitted,

(Signed)

THOS. F. JUDGE,

Clerk.”

RETENTION OF EXTRA INSPECTOR.

The Clerk presented a report from the Chief Engineer, asking approval of his action in retaining, for reasons as set forth in the report, an extra inspector additional to the authority for extra

employees on special service asked for on January 30, 1895, (page 2511 of the Proceedings), and granted at the meeting held February 6, 1895 (page 2542 of the Proceedings); and the report was read.

Mr. Eckhart, seconded by Mr. Alt-peter, moved that the report be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the report was ordered printed and so referred.

The following is

THE REPORT:

"CHICAGO, Feb. 27, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—On January 30th last, (pages 2511-12 of Proceedings) I asked for authority to retain two of the three inspectors then in our employ and to pay the third man up to the 1st of February. This you granted me. After this in discussing the needs of his work with Mr. Miller, with whom these men were employed, he satisfied me so fully that the third man was needed and that his retention was for the good of the District, that I issued no order for his discharge and let him go right along with his work. I therefore ask you to confirm my action so that his name may go upon the rolls and continue there as long as his services are actually needed.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,

Chief Engineer."

MONTHLY REPORT FROM SANITARY INSPECTOR.

The Clerk presented a report from the Sanitary Inspector for the month of January, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, Feb. 27, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Since submitting my last report on the condition of the various camps along the Drainage Channel, there has been some improvement over the unfavorable conditions at that time existing on some of the

sections. There is now an abundant supply of good water throughout the entire line with the exception of one camp on Section B, but at this place they are making preparations to sink a well, which will be completed in a short time.

We have been fortunate this winter in not having had a single case of smallpox, which I attribute to the strict enforcement of the regulations in regard to vaccination, which have been carried out in the various camps. From what I can learn from the hospital authorities, there are not as many cases coming from the Channel as there were several months ago, most of them being cared for by private hospitals. There have been some cases of typhoid fever on almost every section, but in no case has it assumed an epidemic form, and at no time has it exceeded the normal average that is expected from large aggregations of men submitted to similar exposure.

I have requested the Cook County Hospital authorities to notify me of all cases admitted to their wards from the Channel, and if they will do so, I shall see to it that the men shall be taken care of in private hospitals in all cases where the contractor retains hospital dues from the laborers.

Most respectfully submitted,

(Signed) WILLIAM MARTIN, MD.

Sanitary Inspector."

REPORT ON REQUISITION FOR CORWITH OFFICE AND FOR ADDITIONAL EMPLOYE FOR SPECIAL SERVICE.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by two reports from the Chief Engineer, making requisition for authority to rent Division office at Corwith and providing for the abandonment of the Summit and Brighton offices, and making requisition for one employe for special service additional to those provided by the rules, respectively presented and referred to the Committee at the meetings held January 30, 1895 and February 20, 1895 (pages 2510 and 2563 of the Proceedings), recommending that both requisitions be allowed, as set forth in the report of the Committee; and the report was read.

Mr. Cooley, seconded by Mr. Bolden-weck, moved that the report be adopted, ordered printed, and, with enclosures, placed on file, and the recommendations made in the report of the Committee concurred in.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Cooley, Eckhart, Gilmore, Prendergast, Russell and Wenter—seven (7). Excused and not voting—Mr. Altpeter—one (1). Nays—None.

(NOTE—By unanimous consent, Mr. Altpeter was excused from voting on the whole report and Mr. Wenter voted “aye” on the first recommendation of the report and was excused on the second recommendation.)

Upon which result the President declared the motion carried, the report adopted, ordered printed, and, with enclosures, placed on file, and the recommendations made in the report of the Committee concurred in.

The following is

THE REPORT:

“CHICAGO, February 27, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In regard to the application of the Chief Engineer for authority to rent an office in the vicinity of Corwith, presented and referred to this Committee at the meeting held January 30, 1895, (page 2510 of the Proceedings) your Committee have considered the same and recommend that the request be granted, the cost not to exceed fifteen (\$15) dollars per month, and that the

Chief Engineer be instructed to make the best terms possible in regard to the disposition of the office at Brighton Park.

The report of the Chief Engineer is returned herewith for filing.

In regard to the requisition of the Chief Engineer for an additional employe at sixty (\$60) dollars per month on special service, presented and referred to the Committee at the meeting held February 20, 1895, (page 2563 of the Proceedings) your Committee recommend that the same be allowed, and return herewith the report of the Chief Engineer for filing.

Respectfully submitted,

(Signed)

L. E. COOLEY,

Chairman.

B. A. ECKHART,

WM. BOLDENWECK,

W. H. RUSSELL,

Joint Committee on Engineering and Finance.”

(Two (2) enclosures.)

ADJOURNMENT.

On motion of Mr. Eckhart, seconded by Mr. Boldenweck, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS

—OF THE—

BOARD OF TRUSTEES

—OF THE—

SANITARY DISTRICT OF CHICAGO.

MARCH 6, 1895.

OFFICIAL RECORD.

*Published by authority of the Board of Trustees
of the Sanitary District of Chicago.*

REGULAR MEETING.

The two hundred and sixty-third regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, March 6, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Gilmore, Kelly and Wenter—five (5), and subsequently Messrs. Cooley and Russell, making a total of seven (7) members, were present.

MINUTES.

The minutes of the regular meeting

held February 27, 1895, were approved as printed, on motion of Mr. Boldenweck, seconded by Mr. Gilmore.

VOUCHERS.

The Clerk presented the following vouchers:

PAY ROLLS.

Eng. Dept., Chief Engineer's roll, (Feb., 1895).....	\$1,441 67
Eng. Dept., Div. No. 1, (Feb., 1895).....	5,589 27
Eng. Dept., Div. No. 2, (Feb., 1895).....	2,945 30
Eng. Dept., Div. No. 3, (Feb., 1895).....	966 50
Eng. Dept., Special Service roll, (Feb., 1895)	414 17
Eng. Dept., Discharged Men's roll, (Feb., 1895)	52 89
	<hr/>
Clerical Dept., Clerk's roll, (Feb., 1895).....	\$11,409 80
	891 67

Law Dept., Attorney's roll, (Feb., 1895).....	\$1,311 67	
Law Dept., Joliet roll, (Feb., 1895).....	458 33	
		\$1,770 00
Treasury Dept., Treasurer's roll, (Feb., 1895).....		166 66
General Account, General roll, (Feb., 1895). \$	235 00	
General Account, Towpath roll, (Feb., 1895)	103 00	
General Account, Trustees' roll, (Feb., 1895)	2,333 33	
		2,676 33
Police Dept., Marshal's roll, (Feb., 1895)		3,821 65
Total.....		\$20,736 11

ENGINEERING DEPARTMENT.

F. Mayer & Co. (blue prints).....	88 85	
Rand, McNally & Co. (mounting maps)....	5 85	
W.A. Olmsted, (mounting maps).....	9 00	
Robt. W. Hunt & Co., (sieve, etc.).....	2 10	
Alex. G. Hug, (repairing typewriter).....	5 50	
Chicago Towel Supply Co. (toweling).....	5 40	
Waukesha Hygeia Mineral Springs Co. (water)	7 50	
C. S. Austin, (ice).....	9 00	
John McCaffery, (rent, Brighton Park, Feb., 1895)	25 00	
John T. Allison, (rent, Summit, Feb., 1895).	20 00	
J. M. Abbitt, (rent, Willow Springs, Feb., 1895)	20 00	
H. S. Norton, (rent, Lemont, Feb., 1895).	18 00	
O. W. Moon, (rent, Lockport, Feb., 1895)	20 00	
J. H. Spengler, (photo supplies).....	3 03	
J. T. Freeman, (coal, etc.).....	29 45	
John Larney, (coal, etc)	3 00	
Thomas T. Johnston, (traveling).....	5 10	
U. W. Weston, (traveling).....	9 00	
Alex. E. Kastl, (traveling).....	3 45	
Chas. L. Harrison, (traveling).....	34 90	
W. T. Keating, (traveling).....	24 58	
		\$ 348 71

CLERICAL DEPARTMENT.

Cameron, Amberg & Co. (stationery).....	\$ 3 17
A. C. McClurg & Co., (stationery).....	12 19
P. F. Pettibone & Co., (stationery).....	6 33

J. Underwood & Co., (stationery).....	4 00
Western Bank Note & Engraving Co., (envelopes).....	20 00
Warner's Towel Supply, (toweling).....	2 00
C. S. Austin, (ice).....	3 00
	\$ 50 69

LAW DEPARTMENT.

Jos. Donnersberger, (right of way services, February, 1895).	\$ 300 00
George Hingston (court reporting).....	662 40
John Francis, (Sheriff Will County, fees)...	10 40
Western Bank Note & Engraving Co., (envelopes).....	8 00
H. H. Hoffman & Co., (tax register).....	4 50
Warner's Towel Supply, (toweling).....	1 50
C. S. Austin, (ice).....	3 00
	\$989 80

TREASURY DEPARTMENT.

Cameron, Amberg & Co., (bond register)...	\$ 19 00
P. F. Pettibone & Co. (stationery)	3 00
	\$ 22 00

GENERAL ACCOUNT.

John F. Higgins (printing proceedings, etc., February, 1895).....	\$153 02
The Railway Review, (advertising Sec. F).	28 90
	\$ 181 92

POLICE DEPARTMENT.

John Bush, (hay).....	\$ 48 34
Daniel Sullivan, (hay)	33 00
Edward Williams, (expense).....	152 53
	\$ 233 87
Grand total.....	\$22,563 10

Mr. Kelly, seconded by Mr. Boldenweck, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Gilmore, Kelly, Rullen and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the

number of persons in the employ of the District for the week ending March 2, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, March 6, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending March 2, 1895, as the same have been reported to me:

Engineering Department.....	106
Clerical Department.....	4
Law Department.....	8
Treasury Department.....	1
Police Department.....	48
Telephone operator.....	1
Towpath force.....	2

Total employes..... 170

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

MONTHLY REPORT FROM TREASURY DEPARTMENT.

The Clerk presented a report from the Treasury Department for the month of February, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"Balance on hand at date of last report.....	\$ 752,167.23
Received from New York Life Insurance Co., for 4000 bonds....	\$4,000,000.00
Received from New York Life Insurance Co., premium on bonds	20,000.00
Received from New York Life Insurance Co., interest $4\frac{1}{2}$ per cent, 4 days on \$3,000,000; 5 days on \$1,000,000	2,095.89
Received from Thos. F. Judge, Clerk, account Engineering Dept.—Sale of boring machine.....	100.00
Received from Ft. Dearborn National Bank, interest for February.	1,223.45

Received from Metropolitan National Bank, interest for February..	\$ 1,156.51
Received from National Bank of Illinois, interest for February.....	1,192.26
Received from Chicago National Bank, interest for February.....	1,189.97
Received from American Trust and Savings Bank, interest for February.....	32.21
Received from Globe National Bank, interest for February.....	1,273.06
	<u>\$4,028,263.35</u>
Total cash received for month.....	\$1,780,430.58
Total cash disbursed during month as per annexed schedules, viz:	
Clerical Department....	\$ 899.17
Treasury Department....	179.92
Engineering Department....	17,028.72
Engineering—Construction Department.....	152,241.48
Law Department.....	2,990.28
Law Department—Land Account.....	357.00
General Account.....	6,404.98
Police Department.....	4,544.92
	<u>\$184,646.47</u>
Balance this date, in banks as per schedule endorsed hereon	\$4,595,784.11

(Signed) MELVILLE E. STONE,
Treasurer.

CHICAGO, March 4th, 1895."

SCHEDULE:

Fort Dearborn National Bank.....	\$926,122.08
National Bank of Illinois.....	926,962.61
Chicago National Bank.....	925,638.08
Metropolitan National Bank.....	903,859.95
American Trust and Savings Bank.	21,003.79
Globe National Bank.....	892,197.60
Total..	<u>\$4,595,784.11</u>

REPORT ON RETENTION OF EXTRA INSPECTOR.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by a report from the Chief Engineer, asking approval of his action in retaining, for reasons as set forth in the report, an extra inspector additional to authority previously granted, presented and referred to that Committee at the meeting held February 27, 1895, (page 2567 of the Proceedings), recommending that the authority asked for by the Chief Engineer be granted, as provided in the report of the Committee; and the report was read.

Mr. Cooley, seconded by Mr. Kelly, moved that the report be adopted, ordered printed, and, with enclosure, placed on file, and the recommendation made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Gilmore, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and, with enclosures, placed on file, and the recommendation made in the report concurred in.

The following is

THE REPORT:

“CHICAGO, March 6, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In regard to the report of the Chief Engineer, asking approval of his action in retaining, for reasons as set forth in the report, an extra inspector, additional to the authority previously granted, presented and referred to this Committee at the meeting held February 27, 1895 (page 2567 of the Proceedings), your Committee respectfully return said report herewith, with the recommendation that the action of the Chief Engineer be approved, and the authority asked for in the report granted.

Respectfully submitted,

(Signed)

L. E. COOLEY,

Chairman.

W. H. RUSSELL,

THOMAS KELLY,

WM. BOLDENWECK,

JOHN J. ALTPETER,

Joint Committee on Engineering and Finance.”

(One (1) enclosure.)

AMENDMENT TO RULE 54.

Mr. Russell, for the Committee on Rules, presented a report from that Committee, amending Rule 54 of the Rules of the Board of Trustees as provided in the report; and the report was read.

Under the rules the report and amendment were ordered printed and laid over.

The following is

THE REPORT:

“CHICAGO, March. 6, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Committee on Rules recommend that Paragraphs 3 and 4 of Rule 54 be amended to read as follows:

One Assistant Attorney at a salary not to exceed Two Thousand (\$2,000.00) Dollars per annum.

One Assistant Attorney at a salary not to exceed Eighteen Hundred (\$1,800.00) Dollars per annum.

The present rules provide for two Assistants at Three Thousand (\$3,000.00) Dollars and Fifteen Hundred (\$1,500.00) Dollars respectively.

Respectfully submitted,

(Signed)

FRANK WENTER,

Chairman.

W. H. RUSSELL,

Committee on Rules.”

ADJOURNMENT.

On motion of Mr. Kelly, seconded by Mr. Altpeter, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS

—OF THE—

BOARD OF TRUSTEES

—OF THE—

SANITARY DISTRICT OF CHICAGO.

MARCH 13, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and sixty-fourth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, March 13, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wenter—six (6), and subsequently Mr. Gilmore, making a total of seven (7) members, were present.

MINUTES.

The minutes of the regular meeting

held March 6, 1895, were approved as printed, on motion of Mr. Boldenweck, seconded by Mr. Kelly.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

Construction Account—

Griffiths & McDermott (Sec. 1, March 1, 1895).	\$ 2,195 94
McArthur Bros. (Sec. 2, March 1, 1895).....	4,340 00
Gilman & Co. (Sec. 3, March 1, 1895).....	10,480 05
McArthur Bros. (Sec. 4, March 1, 1895).....	4,200 00
The Qualey Construction Co. (Sec. 5, March 1, 1895).....	6,752 81
Mason, Hoge & Co. (Sec. 6, March 1, 1895)	9,314 81
Mason, Hoge & Co. (Sec. 7, March 1, 1895)	9,582 56

Mason, Hoge, King & Co. (Sec. 8, March 1, 1895).....	\$ 13,669 90
Halvorson, Richards & Co. (Sec. 9, March 1, 1895).....	12,986 48
E. D. Smith & Co. (Sec. 10, March 1, 1895)....	10,640 00
Mason, Hoge & Co. (Sec. 11, March 1, 1895).....	7,142 41
Mason, Hoge & Co. (Sec. 12, March 1, 1895)	14,215 47
Mason, Hoge & Co., (Sec. 13, March 1, 1895)	6,802 25
Smith & Eastman (Sec. 14, March 1, 1895)....	19,226 37
Wright, Meysenburg, Sinclair & Carry (Sec. 15, March 1, 1895)....	1,806 87
Heldmaier & Neu (Sec. A, March 1, 1895)....	504 05
Heldmaier & Neu (Sec. B, March 1, 1895)....	3,037 23
E. D. Smith & Co. (Sec. D, March 1, 1895)....	4,388 06
Angus & Gindele (Sec. E, March 1, 1895)....	1,034 54
	<hr/> \$142,319 80

ENGINEERING DEPARTMENT.

Cameron, Amberg & Co. (stationery).....	\$67 12
A. C. McClurg & Co., (stationery).....	18 74
P. F. Pettibone & Co., (stationery).....	34 85
Western Bank Note & Engraving Co., (printing).....	55 00
Eugene Dietzgen Co., (drafting material)...	24 79
Post & Jacobi Co., (drafting material)...	17 70
A. H. Abbott & Co., (drafting material)...	18 65
Fuller & Fuller Co., (chemicals).....	6 80
Hibbard, Spencer, Bartlett & Co., (twine)...	2 50
Gerts, Lumbard & Co., (paint brushes).....	2 28
Warner's Towel Supply, (toweling).....	5 10
Treleaven Optical Co., (photo supplies).....	23 37
T. E. Copelin, (negative pans).....	7 00
Wm. McGinnis, (gauge reading, Feb., 1895)...	10 00
E. Hastings, (gauge reading, Feb., 1895)...	10 00
Mary Rusk, (gauge reading, Feb., 1895)...	10 00
Geo. Brainard, (gauge reading, Feb., 1895)...	10 00
Wm. Kirkham, (gauge reading, Feb., 1895)...	10 00
Hiram A. Miller, (traveling).....	27 64
	<hr/> \$361 54

LAW DEPARTMENT.

The Gunthorp-Warren Printing Co., (printing).....	\$ 20 00
<i>The Joliet Times</i> , (advertising condemnation notice).....	52 00
Frank Vander Bogart, Clerk, (fees).....	135 00
Geo. E. Dawson, (expense).....	190 40
	<hr/> \$397 40

GENERAL ACCOUNT.

Burton F. White, (range, Legislative Inspection trip)	\$ 28 00
---	----------

POLICE DEPARTMENT.

Standard Oil Co., (kerosene).....	\$ 19 75
Thomas Ludwig, (horse shoeing, etc.)	6 20
Daniel E. Tracy, (horse-shoeing, etc.)	24 40
Bohanon Carriage Co., (repairing wagonette and buggy).....	124 70
	<hr/> \$175 05

Grand total..... \$143,281 79

Mr. Eckhart, seconded by Mr. Russell, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending March 9, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, March 13, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending March

March 13,]

—2576—

[1895.

9, 1895, as the same have been reported to me:

Engineering Department.....	106
Clerical Department.....	4
Law Department.....	8
Treasury Department.....	1
Police Department.....	48
Telephone operator.....	1
Towpath force.....	2

Total employes..... 170

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

MONTHLY REPORT FROM CLERICAL DEPARTMENT.

The Clerk presented a report from the Clerical Department for the month of February, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, March 13, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have the honor to herewith report that the total amount expended on account of and charged to the Clerical Department during the month of February, 1895, was \$929.17, divided as follows:

Salaries	\$891 67
Printing.....	2 50
General expenses.....	35 00
Total.....	<u>\$929 17</u>

There are no outstanding liabilities, and the expenses for the present month will, from present indications, be about \$975.

The total amount expended and charged to the General Account during the month of February, 1895, was \$6,744.05, divided as follows:

Salaries.....	\$2,656 33
Printing.....	494 18
Advertising.....	449 27
Electric lighting.....	58 29
Engraving and printing bonds (4th issue).....	1,590 00
Vaccine points.....	45 00

Legislative inspection trip.....	1,386 43
Furniture.....	3 05
General expenses.....	61 50
Total.....	<u>\$6 744 05</u>

There are no outstanding liabilities against the General Account, and the expenses for the present month will be about \$3,500.

During the month of February, 1895, there were warrants authorized and drawn against the various accounts for \$295,304.73, as follows:

Engineering Department.....	\$17,159 52
Clerical Department.....	929 17
Law Department.....	3,092 28
Treasury Department.....	179 92
General Account.....	6,744 05
Engineering Department (Construction Account).....	262,726 24
Police Department.....	4,473 55
Total.....	<u>\$295,304 73</u>

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

REQUISITION FOR ADDITIONAL MEN FOR SPECIAL SERVICE.

The Clerk presented a report from the Chief Engineer, making requisition for ten (10) men for special service (cement inspection and testing), additional to those provided by the rules, as set forth in the report; and the report was read.

Mr. Eckhart, seconded by Mr. Altpeter, moved that the report be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously and the report was ordered printed and so referred.

The following is

THE REPORT:

"CHICAGO, March 12, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—As shipments of cement are about to begin for our wall work, it is necessary to reorganize the force for testing same, and I ask for authority to employ in this special service ten persons, as follows:

One recorder of tests at \$75.00 per month.

Five warehouse men at \$75.00 per month.

Four men for making briquettes, testing cement, salary from \$75.00 to \$100.00.

These men are not all needed now, and if you honor this request I mean to take them on as the needs of the work shall require.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

MONTHLY REPORT FROM LAW DEPARTMENT.

The Clerk presented a report from the Law Department for the month of February, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, March 13, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I submit herewith the monthly report for February, 1895.

The total amount paid out by this Department during the month is as follows:

SALARIES.

Attorneys.....	\$1,315 28	
Office force.....	402 52	
	<hr/>	\$1,717 80

GENERAL EXPENSES.

Court costs.	\$920 13	
Right of way.....	431 55	
Expense account...	18 80	
Printing and stationery.....	4 00	
	<hr/>	\$1,374 48

Total..... \$3,092 28

The matter of the motion for change of venue from Du Page County in the suit of the Sanitary District of Chicago vs. Carl Moll et al., came up again before Judge Kellum at Sycamore, Illinois, February 25th, 1895, and was denied by him on the ground that the motion was premature, the cause not having been reinstated as to those defendants.

The suit of the Sanitary District vs. Frances Livingston, to recover under the covenants of her warranty deed for taxes paid by the Sanitary District on the lots

purchased from her, was put on the short cause calendar and was tried by a jury and judgment obtained for the full amount claimed.

In the matter of the appeal of the suit of the District vs. Michael Loughran taken to the March term of the Supreme Court, an abstract, brief and argument have been prepared by Haley & O'Donnell and the printing of the same has been cared for here.

In the matter of the appeal taken to the Appellate Court in the case of Johnson et al., vs. Sanitary District, et al., the brief and argument on the part of the District has been prepared.

For the coming month preparations for the retrial of the DuPage County suit and the trial of the suit for the remaining lands in Will County, and routine business will occupy the department.

Respectfully submitted,

(Signed) GEO. E. DAWSON,
Attorney."

AMENDMENT TO RULE 54.

Under the head of "Unfinished Business," the report of the Committee on Rules, amending Rule 54 of the Rules of the Board of Trustees, as provided in the report, presented, ordered printed and laid over at the meeting held March 6, 1895 (page 2573 of the Proceedings), was again read, as provided in the rules.

Mr. Russell, seconded by Mr. Kelly, moved that the report be adopted and placed on file, and Rule 54 amended as provided in the report.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted and placed on file, and Rule 54 amended, as provided in the report.

The following is

RULE 54, AS AMENDED:

"54. The Attorney may appoint the following assistants as needed by him, subject to confirmation by the Board:

One Principal Assistant Attorney at a salary not to exceed the rate of three thousand six hundred (\$3,600) dollars per annum.

One Assistant Attorney at a salary not

to exceed two thousand (\$2,000) dollars per annum.

One Assistant Attorney at a salary not to exceed eighteen hundred (\$1,800) dollars per annum.

The Attorney may employ one typewriter and stenographer at a salary not to exceed seventy-five (\$75.00) dollars per month. The Attorney may employ any additional assistance as required and as authorized by the Board.

The duties of the Assistant Attorneys and other employes of the Law Department shall be prescribed by the Attorney and performed under his direction.

The Principal Assistant Attorney shall be Acting Attorney when authorized by the Attorney and in his absence."

CLAIM OF SMITH & EASTMAN FOR EMBANKMENTS ON SECTIONS 14 AND 15.

The Clerk presented a communication from Messrs. Smith & Eastman, contractors on Section 14, enclosing bill, bearing claim made under contract for building embankments on Sections 14 and 15, dated January 6, 1894; and the communication and accompanying bill were read.

Mr. Eckhart, seconded by Mr. Kelly, moved that the communication and enclosure be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the communication and enclosure were ordered printed and so referred.

The following is

THE COMMUNICATION:

"CHICAGO, February 15, 1895.

*To the Honorable Board of Trustees,
Sanitary District of Chicago;*

GENTLEMEN — We send you herewith our bill for building the embankments on Sections 14 and 15, in accordance with the contract dated January 6th, 1894.

We would feel greatly obliged for an early settlement of this account.

Respectfully yours,

(Signed) SMITH & EASTMAN."

(One (1) enclosure.)

(Enclosure.)

"CHICAGO, December 31, 1894.

THE SANITARY DISTRICT OF CHICAGO,

To Smith & Eastman, Dr.

To 88,534 cubic yards of glacial drift placed in embankments on Section 14, Drainage Channel, as per contract dated January 6, 1894, at 20c...	\$ 17,706 80
363,466 cubic yards of glacial drift, placed in embankments on Sections 14 and 15, as per above contract, at 36c.....	130,847 76

452,000 yards, total, as per Sanitary District Engineer's original estimate.....	\$148,554 56
--	--------------

Credit.

By cash	82,304 85
---------------	-----------

Balance due.....	\$ 66,249 71
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The 17,000 lineal feet of embankments contracted for is estimated by us to contain about 500,000 cubic yards of glacial drift, and we claim compensation for the full amount of yardage which the 17,000 lineal feet of embankments would have contained if completed. We have based the above bill on the "original" estimate of the Chief Engineer of the Sanitary District. We will give credit for the actual cost to us of placing the material omitted from the embankments, by the order of the Chief Engineer of the Sanitary District, when the actual measurements are determined.

Respectfully,

(Signed) SMITH & EASTMAN."

ADJOURNMENT.

On motion of Mr. Eckhart, seconded by Mr. Kelly, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

March 13,]

—2579—

[1895.

PROCEEDINGS

—OF THE—

BOARD OF TRUSTEES

—OF THE—

SANITARY DISTRICT OF CHICAGO.

MARCH 20, 1895.

OFFICIAL RECORD.

(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)

REGULAR MEETING.

The two hundred and sixty-fifth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, March 20, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Cooley, Eckhart, Kelly, Russell and Wenter—six (6) members, were present.

MINUTES.

The minutes of the regular meeting held March 13, 1895, were approved as printed, on motion of Mr. Kelly, seconded by Mr. Eckhart.

VOUCHERS.

The Clerk presented the following vouchers:

LAW DEPARTMENT.

E.R. Nadelhoffer (steno- graphic report).....	\$ 106 75
J. Underwood & Co. (carbon paper).....	4 00
Geo. Hornstein & Co. (printing).....	37 80
The Gunthorp-War- ren Printing Co., (printing).....	478 80
	<hr/> \$ 627 35

POLICE DEPARTMENT.

Thomas Ludwig, (blacksmithing).....	\$ 10 30
John Larney (feed)...	61 62
	<hr/> \$ 71 92
Grand total.....	<hr/> \$ 699 27

Mr. Eckhart, seconded by Mr. Kelly, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

REQUISITION.

The Clerk presented the following requisition:

No. 936, Police Department (printing and sundries).....\$27.00

Mr. Kelly, seconded by Mr. Russell, moved that Requisition No. 936, for the Police Department, as read and shown above, be allowed.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, and Requisition No. 936, for the Police Department, as read and shown above, allowed.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending March 16, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, March 20, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending March 16, 1895, as the same have been reported to me:

Engineering Department.....	106
Clerical Department.....	4
Law Department.....	7
Treasury Department.....	1
Police Department.....	47
Telephone operator.....	1
Towpath force.....	2

Total employes..... 168

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk.”

MONTHLY REPORT FROM ENGINEERING DEPARTMENT.

The Clerk presented a report from the Engineering Department (accompanied by classified statement) for the month of February, 1895.

The report was read, and, by unanimous consent, was ordered printed, and, with accompanying classified statement, placed on file.

The following is

THE ORDER:

“CHICAGO, March 20, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I herewith transmit the reports of the Divisions of Construction, Drafting and Designing, showing the detailed operations of the Engineering Department for the month of February 1895; also a classified statement of expenses in the usual form.

The expenses for the month of February were as follows:

Salaries.....	\$ 11,409 80
Supplies, etc.....	620 72
Regular contractor's estimates.....	252,853 99
	<hr/> \$264,884 51

I estimate the expenses of this department for the month of March will be \$425,000.00.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer.”

(Accompanied by classified statement.)

“CHICAGO, March 19, 1895.

Isham Randolph, Esq., Chief Engineer:

DEAR SIR—I beg to submit herewith my report of the work of construction for the month of February. Owing to the continued cold weather, work on most of the earth sections was wholly suspended, and partially so on many of the rock sections; hence, I omit the details which usually accompany the following tabulated statements, showing the amount of work done during the month, and the condition of the work up to the 1st inst.

Respectfully submitted

(Signed) U. W. WESTON,
Supt. of Construction.”

STATEMENT SHOWING AMOUNT OF WORK DONE DURING THE MONTH
OF FEBRUARY, 1895—(MAIN CHANNEL).

SECTIONS.	Amount Done During February.	Average Monthly Requirement.	Deficiency for February.	Excess Over Monthly Requirement.	Per Cent. of Monthly Requirement.
O.....		\$13,271 42	\$13,271 42		00
N.....		10,674 33	10,674 33		00
M.....	\$ 1,410 50	6,274 34	4,863 84		22
L.....	3,112 60	8,682 82	5,570 22		36
K.....		11,559 57	11,559 57		00
I.....		11,398 49	11,398 49		00
H.....	348 00	12,493 57	12,145 57		3
G.....		15,277 64	15,277 64		00
F.....					00
E.....	1,299 78	23,230 53	21,930 75		6
D.....	7,050 62	19,215 65	12,165 03		37
C.....		13,443 10	13,443 10		00
B.....	4,801 95	12,901 32	8,099 37		37
A.....	640 06	24,012 30	23,372 24		3
1.....	2,788 50	44,801 03	42,012 53		6
2.....	13,157 60	20,950 88	7,793 28		63
3.....	26,145 48	29,177 70	3,032 22		90
4.....	16,642 14	22,982 67	6,340 53		72
5.....	12,078 00	18,337 51	6,309 51		66
6.....	15,550 50	26,327 41	11,276 91		58
7.....	14,038 50	25,622 15	11,583 65		55
8.....	25,415 00	21,799 22		3,615 78	117
9.....	33,297 70	19,325 00		13,972 70	172
10.....	21,840 00	22,458 34	618 34		97
11.....	12,680 00	19,455 05	6,775 05		65
12.....	22,744 75	20,413 93		2,330 82	111
13.....	8,671 00	21,140 02	12,469 02		41
14.....	31,823 00	22,648 61		9,179 39	141
15.....	4,366 00	23,607 65	19,241 65		18
Totals.....	\$279,906 68	\$542,032 25	\$291,224 26	\$29,098 69	51 64-100

TABLE OF AMOUNT OF WORK DONE (INCLUDING RIVER DIVER

SECTIONS.	CONTRACTORS.	MAIN CHANNEL.		RIVER DIVERSION		RUBBLE MASONRY.
		<i>Glacial Drift.</i>	<i>Solid Rock.</i>	<i>Glacial Drift.</i>	<i>Solid Rock.</i>	
		Cubic Yds.	Cubic Yds.	Cubic Yds.	Cubic Yds.	Cu. Yds.
O	McMahon & Montgomery Co. et al.	518,821		7,600		
N	Hayes Bros. et al.	71,300				
M	The Heidenreich Co.	373,100				
L	The Heidenreich Co.	522,800				
K	Christie & Lowe.	433,000				
I	Christie & Lowe.	725,300				
H	Gahan & Byrne.	147,518				
G	Gahan & Byrne.	544,000				
F	Weir, McKechney & Co.	504,293		158,234		
E	Angus & Gindele.	537,963		95,718		
D	E. D. Smith & Co.	1,174,400				
C	Western Dredging & Imp. Co.	813,463		162,537		
B	Heldmaier & Neu.	646,969		211,126		
A	Heldmaier & Neu.	874,816		128,288		
1	Griffiths & McDermott.	451,866		5,876		
2	McArthur Bros.	589,680	67,900	29,516		
3	Gilman & Co.	361,410	260,500			
4	McArthur Bros.	729,000	28,700			
5	The Qualey Construction Co.	578,500	44,500			1,900
6	Mason, Hoge & Co.	550,100	93,500	112,700		1,300
7	Mason, Hoge & Co.	169,600	405,400	97,000	41,800	
8	Mason, Hoge, King & Co.	41,600	697,400	56,600	96,900	
9	Halvorson, Richards & Co.	71,700	665,000	37,700	16,000	
10	E. D. Smith & Co.	29,200	912,200	27,400	56,500	
11	Mason, Hoge & Co.	44,032	671,600	5,756	11,483	
12	Mason, Hoge & Co.	27,400	693,900	11,739		
13	Mason, Hoge & Co.	32,822	902,700			
14	Smith & Eastman	343,700	374,500			
15	Wright, Meysenburg, Sinclair & Carry	29,500	23,800			
Totals.		11,940,853	5,841,600	1,147,790	222,683	2,600

Main Channel, glacial drift.....
 Main Channel, solid rock.....
 River Diversion, glacial drift.....
 River Diversion, solid rock.....
 Rubble Masonry.....

Total amount required to be done March 1st, 1895.....
 Total amount done March 1st, 1895.....

Total amount short as per contracts.....

Total value of work done under contracts March 1st, 1895.....
 Reserved..... { 12½ per cent.....
 { 10 per cent.....

Total value of vouchers paid, including those of March 1st, 1895....
 Total value of vouchers paid for collateral work, including those of

Total disbursement, Construction Account.....

NOTE,—*Overhaul to Levee—Section 1 not included.

SION) AND CONDITION OF WORK ON CONTRACTS MARCH 1ST, 1895.

Total value of work done to March 1st, 1885, on each section.	Total value of work required to be done to March 1st, 1885.	Amounts behind as per contracts.	Amounts ahead as per contracts.	Average monthly progress called for in contracts.	Average monthly progress necessary Jan. 1st, 1885, to time of completion.	Progress made during month of February, 1885.
\$110,464 81	\$143,660 00	\$ 33,195 19		\$14,866 00	\$14,644 94	
16,399 00	106,743 30	90,344 30		10,674 33	14,986 56	
80,962 70	69,017 74		\$ 11,944 96	6,274 34	5,140 87	\$ 1,410 50
102,991 60	95,511 02		7,480 58	8,682 82	7,926 55	3,112 60
109,000 00	127,155 27	18,155 27		11,559 57	11,583 70	
181 325 00	125,383 39		55,941 61	11,398 49	7,178 89	
42,780 22	137,429 27	94,649 05		12,493 57	16,957 53	348 00
152,320 00	168,054 04	15,734 04		15,277 64	14,632 96	
157,350 16	157,350 16					
173,918 23	271,494 93	97,576 65		23,230 53	26,990 69	1 299 78
310,482 00	384,313 00	73,831 00		19,215 65	22,571 94	7,050 62
229,360 00	293,914 20	64,554 20		14,695 71	17,360 69	
231,685 65	292,751 60	61 065 95		14,637 58	17,638 83	4,801 95
307,200 60	504,057 00	196,856 40		25,202 85	35,435 74	640 06
*176 556 26	438,023 93	261,467 67		44,801 03	55,635 03	2,788 50
350 895 98	528,811 50	177,915 52		21,152 46	30,636 53	13 157 60
379,109 70	457,459 20	78,349 50		29,177 70	33,936 03	26 145 48
369 479 54	597,549 42	228 069 88		22,982 67	36,357 44	16,642 14
206 295 50	468 881 51	262,586 01		18,887 51	32,729 52	12,078 00
250 698 50	352 563 30	101,864 80		26,896 13	32,371 16	15,550 50
398 008 00	423,953 70	25,945 70		25,699 42	26,037 97	14,038 50
619 271 25	647,433 81	28,162 56		23,979 03	26,264 41	25,415 00
552 133 00	537,306 21		14,826 79	19,900 23	21,128 85	33,297 70
789,110 00	642,066 75		147,043 25	23,780 25	14 817 52	21,840 00
556,404 15	532 425 69		23 978 46	19,719 47	17,553 87	12 680 00
561,755 30	553 514 58		8,240 72	20,500 54	20,959 47	22 744 75
683 301 97	570,780 54		112,521 43	21,140 02	12,819 77	8,671 00
376,061 00	611,512 47	235,451 47		22,648 61	38,123 95	31,828 00
19,647 00	118,038 25	98,391 25		23,607 65	27,107 35	4,366 00
\$8,494,967 17	\$10,357,155 78	\$2,244,166 41	\$381,977 80	\$552,081 80	\$639,528 76	\$279,906 68

Cubic Yards.

	11,940,853
	5,841,600
	1,147,790
	222,683
	2,600
	\$10,357,155 78
	8,494,967 17
	\$1,862,188 61
	\$8,494,967 17
	\$1,042,056 87
	129,764 43
	1,171,821 30
	\$7,323,145 87
March 1, 1895.	+627,200 01
	\$7,950,345 88

†Overhaul to Levee—Section 1 included.

"CHICAGO, March 5, 1895.

Mr. Isham Randolph, Chief Engineer:

DEAR SIR—The work of the Division of Drafting and Designing for the month of February, 1895, was as follows:

The preparation of plans for Regulating works, tail race and channel through Joliet was continued.

The topographical party has continued the work below Joliet. The section and quarter section corners adjacent to the Desplaines River, from Brandon's Road to Millsdale, have been located. The stadia work has been carried down to a point about one mile below the Millsdale bridge. One discharge section was staked out in the Desplaines River above the Spillway and cross-sectioned. Another section has been staked out near Gary's Station.

Some further work was done on plats and profiles of the Illinois and Michigan Canal and the Illinois River.

The work of preparing record photographs was continued, as was also the maintenance of water gauges.

Prepared a profile of the center line of the proposed boulevard crossing of the Main Channel; a plan, profile and cross-sections of approaches for proposed tunnel under the channel; a colored map and profile from Chicago to Joliet; a progress profile showing the condition of work up to January 1st, 1895; a colored topographical map of the Upper Illinois River; a profile of the Upper Illinois River; a colored map of the watersheds of the Chicago, Desplaines and Calumet Rivers; a colored map of the Illinois River Basin, and a general profile of the Chicago Divide and the Desplaines and Illinois Rivers.

For the Law Department, finished a tracing of Section 22, Township 36 North, Range 10 East, and prepared a statement showing the acreage and cost of the right of way secured by the Sanitary District.

Some work was done on six maps and cross-sections which are being made for the Navy Department.

The original and tracings of the District map were finished.

Platting was continued on the second and third Plat Books, the progress profiles of the work, and the map of the

Lower Illinois River, showing the overflowed lands.

The expense for March will be about the same as for February.

Respectfully,

(Signed)

THOS. T. JOHNSTON,

Assistant Chief Engineer."

REPORT ON SUSPENSION OF WORK ON LEVEES ON SECTIONS 14 AND 15.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance with reference to and accompanied by a communication from Smith & Eastman, contractors for Section 14, concerning the order for the suspension of their work on levees on Sections 14 and 15, presented and referred to that Committee at the meeting held December 26, 1894 (page 2376 of the Proceedings), recommending that the action of the Chief Engineer be approved; and the report was read.

Mr. Cooley, seconded by Mr. Russell, moved that the report be adopted, ordered printed, and, with enclosure, placed on file, and the recommendation made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and with enclosure, placed on file, and the recommendation made in the report concurred in.

The following is

THE REPORT:

"CHICAGO, March 20, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—In regard to the communication from Smith & Eastman, contractors for Section 14, with reference to the order for the suspension of their work on levees on Sections 14 and 15, presented and referred to this Committee at the meeting held December 26, 1894 (page 2376 of the Proceedings), your Committee reports as follows:

We are of the opinion that the action of the Chief Engineer was fully justified and in accordance with the terms of the contract, and recommend that the same be approved by the Board,

The communication is returned here with for filing.

Respectfully submitted,
(Signed) L. E. COOLEY,
Chairman.

THOMAS KELLY,
B. A. ECKHART,
JOHN J. ALTPETER,
W. H. RUSSELL,

Joint Committee on Engineering and Finance."

(One (1) enclosure.)

REPORT ON REQUISITION FOR ADDITIONAL
MEN FOR SPECIAL SERVICE.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance with reference to and accompanied by a report from the Chief Engineer, making requisition for ten (10) men for special service (cement inspection and testing) additional to those provided by the rules, presented and referred to that Committee at the meeting held March 13, 1895 (page 2576 of the Proceedings), recommending that the authority requested by the Chief Engineer be granted, as provided in the report of the Committee; and the report was read.

Mr. Cooley, seconded by Mr. Russell, moved that the report be adopted, ordered printed, and, with enclosure, placed on file, and the recommendation made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and, with enclosure, placed on file, and the recommendation made in the report concurred in.

The following is

THE REPORT:

"CHICAGO, March 20, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In regard to the report of the Chief Engineer, asking authority to reorganize the force for testing cement and to employ ten (10) additional men in this special service, as provided in the report, presented and referred to this Committee at the meeting held March

13, 1895 (page 2576 of the Proceedings), your Committee respectfully report that they have considered the same and return the report herewith for filing, with the recommendation that the authority asked for therein be granted.

Respectfully submitted,
(Signed) L. E. COOLEY,
Chairman.

THOMAS KELLY,
B. A. ECKHART,
JOHN J. ALTPETER,
W. H. RUSSELL,

Joint Committee on Engineering and Finance."

(One (1) enclosure.)

REPORT ON CLAIM OF SMITH & EASTMAN
FOR EMBANKMENTS ON SEC-
TIONS 14 AND 15.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by a communication from Smith & Eastman, contractors for Section 14, enclosing bill, being claim made under contract for building embankments on Sections 14 and 15, presented and referred to that Committee at the meeting held March 13, 1895 (page 2578 of the Proceedings), recommending that said claim be not allowed; and the report was read.

Mr. Cooley, seconded by Mr. Russell, moved that the report be adopted, ordered printed, and, with enclosure, placed on file, and the recommendation made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and, with enclosure, placed on file, and the recommendation made in the report concurred in.

The following is

THE REPORT:

"CHICAGO, March 20, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In regard to the communication from Smith & Eastman, contractors for Section 14, enclosing bill,

being claim made under contract for building embankments on Sections 14 and 15, presented and referred to this Committee at the meeting held March 13, 1895 (page 2578 of the Proceedings), your Committee respectfully report that they have considered the same, and return the communication and bill herewith, with the recommendation and the claim be not allowed, and that the communication and bill be placed on file.

Respectfully submitted,

(Signed)

L. E. COOLEY,
Chairman.

THOMAS KELLY,
B. A. ECKHART,
JOHN J. ALTPETER,
W. H. RUSSELL,

Joint Committee on Engineering and Finance."

(Accompanied by communication and bill.)

REPORT ON SUSPENSION OF CLAUSE "J"
ON SECTIONS 2, 3 AND 4 AND DIVER-
SION OF DESPLAINES RIVER AT LOCK-
PORT.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, transmitting for filing, without recommendation in the premises, two reports from the Chief Engineer, with enclosures, with reference to the suspension of Clause "J" of the contracts for Sections 2, 3 and 4, presented and referred to that Committee at the meetings held June 27 and July 11, 1894 (pages 2023 and 2038 of the Proceedings), and also a communication from the American Straw Board Company, with reference to a rumored change in the course of the Desplaines River in the vicinity of Lockport, presented and referred to that Committee at the meeting held June 13, 1894 (page 1992 of the Proceedings); and the report was read.

Mr. Cooley, seconded by Mr. Altpeter, moved that the report be adopted, ordered printed, and, with all enclosures, placed on file.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and, with all enclosures, placed on file.

The following is

THE REPORT:

"CHICAGO, March 20, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Committee has considered the question of the suspension of Clause "J" of the contracts for Sections 2, 3 and 4, as recommended by the Chief Engineer in his reports, presented and referred to this Committee at the meetings held June 27 and July 11, 1894, (pages 2023 and 2038 of the Proceedings, respectively).

Your Committee does not feel called upon to make any recommendation in the premises, and returns the documents submitted, for filing.

In regard to the communication from S. H. Emery, Jr., Manager Illinois Division American Straw Board Company, inquiring as to the intentions of the District as to work in the vicinity of Lockport, presented and referred to the Committee at the meeting held June 13, 1894, (page 1992 of the Proceedings), the Committee referred the same to the Attorney for answer, at its first meeting thereafter.

Respectfully submitted,

(Signed)

L. E. COOLEY,
Chairman.

THOS. KELLY,
B. A. ECKHART,
JOHN J. ALTPETER,
W. H. RUSSELL,

Joint Committee on Engineering and Finance."

(Three (3) enclosures.)

ORDER FOR PREPARATION OF SUBJECT
INDEX OF THE PROCEEDINGS.

Mr. Cooley presented an order authorizing and directing the Clerk to have prepared and printed a subject index of the proceedings of the Board of Trustees from organization to the end of 1894, as provided in the order; and the order was read.

Mr. Kelly, seconded by Mr. Eckhart, moved that the order be referred to the Committee on Rules.

The motion prevailed unanimously and the order was so referred.

The following is

THE ORDER:

“Ordered, That the Clerk be and he hereby ordered and directed to have prepared a full and complete subject-index of the Proceedings of the Board, from its organization to the end of 1894, and at a price not to exceed one hundred (\$100) dollars; and further, to have the

same printed and published with the proceedings and regular index of 1894.”

ADJOURNMENT.

On motion of Mr. Kelly, seconded by Mr. Altpeter, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

March 20,]

—2589—

[1895.

PROCEEDINGS

—OF THE—

BOARD OF TRUSTEES

—OF THE—

SANITARY DISTRICT OF CHICAGO.

MARCH 27, 1895.

OFFICIAL RECORD.

*Published by authority of the Board of Trustees
of the Sanitary District of Chicago.*

REGULAR MEETING.

The two hundred and sixty-sixth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, March 27, 1895, at 2:00 o'clock P. M.

The Clerk called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Eckhart, Kelly and Russell—five (5), and subsequently Messrs. Gilmore and Cooley, making a total of seven (7) members, were present.

The President being absent, on motion of Mr. Boldenweck, seconded by Mr. Kelly, Mr. Eckhart took the chair.

MINUTES.

The minutes of the regular meeting held March 20, 1895, were approved as printed, on motion of Mr. Kelly, seconded by Mr. Boldenweck.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

<i>Construction Account—</i>	
Griffiths & McDermott	
(Sec. 1, March 16, 1895)	\$ 6,959 45
McArthur Bros. (Sec. 2, March 16, 1895)	10,801 00
Gilman & Co. (Sec. 3, March 16, 1895)	14,231 00
McArthur Bros. (Sec. 4, March 16, 1894)	17,445 14
The Qualey Construction Co. (Sec. 5, March 16, 1895)	4,249 44
Mason, Hoge & Co. (Sec. 6, March 16, 1895)	9,498 56

Mason, Hoge & Co. (Sec. 7, March 16, 1895)	\$ 8,489 25
Mason, Hoge, King & Co. (Sec. 8, March 16, 1895).....	12,492 60
Halvorson, Richards & Co. (Sec. 9, March 16, 1895).....	15,677 99
E. D. Smith & Co. (Sec. 10, March 16, 1895)...	12,950 00
Mason, Hoge & Co. (Sec. 11, March 16, 1895).....	5,478 16
Mason, Hoge & Co. (Sec. 12, March 16, 1895).....	15,116 93
Mason, Hoge & Co., (Sec. 13, March 16, 1895).....	6,540 63
Smith & Eastman (Sec. 14, March 16, 1895)...	13,924 75
Wright, Meysenburg, Sinclair & Carry (Sec. 15, March 16, 1895)...	2,374 75
Heldmaier & Neu (Sec. B, March 16, 1895)...	1,193 06
Western Dredging and Improvement Com- pany, (Sec. C, March 16, 1895).....	616 88
E. D. Smith & Co. (Sec. D, March 16, 1895)...	3,469 93
Christie & Lowe. (Sec. I, March 16, 1895)....	1,984 06
Christie & Lowe. (Sec. K, March 16, 1895)...	2,419 37
The Heidenreich Co. (Sec. L, March 16, 1895).....	3,378 55
The Heidenreich Co. (Sec. M, March 16, 1895).....	1,708 88
Thos. Farrell, Treas- urer DuPage Town- ship, Will County, Illinois, (Extra work, Sec. 12, temporary roadway Romeo Road crossing)	300 00
	<hr/> \$171,300 38

ENGINEERING DEPARTMENT.

Pay roll, Special In- specter, (Feb., 1895).	\$75 00
Isham Randolph, (trav- eling).....	72 60
	<hr/> \$147 60

CLERICAL DEPARTMENT.

Waukesha Hygeia Min- eral Springs Co. (wa- ter)	\$ 3 75
---	---------

GENERAL ACCOUNT.

Chicago Edison Co. (electric lighting)...	\$ 49 85
Grand total.....	<hr/> \$171,501 58

Mr. Boldenweck, seconded by Mr. Russell, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter (*except on Construction Vouchers of McArthur Bros. and Gilman & Co., on Sections 2, 3 and 4*), Boldenweck (*except on Construction Vouchers of McArthur Bros. and Gilman & Co., on Sections 2, 3 and 4*), Eckhart, Gilmore, Kelly (*except on Construction Vouchers of McArthur Bros. and Gilman & Co., on Sections 2, 3 and 4*) and Russell—six (6). Nays—None.

Upon which result the President declared the motion carried and the vouchers, as read and shown above (*except Construction Vouchers of McArthur Bros. and Gilman & Co., on Sections 2, 3 and 4*), approved and ordered paid, and said Construction Vouchers of McArthur Bros. and Gilman & Co., on Sections 2, 3 and 4, referred back to the Chief Engineer.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending March 23, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, March 27, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending March 23, 1895, as the same have been reported to me:

Engineering Department.....	110
Clerical Department.....	4
Law Department.....	7
Treasury Department.....	1
Police Department.....	47
Telephone operator.....	1
Towpath force.....	2

Total employes.....

172

Respectfully submitted,

(Signed)

THOS. F. JUDGE,

Clerk."

APPOINTMENT OF ASSISTANT ATTORNEYS.

The Clerk presented a report from the Attorney, stating that he had appointed Messrs. Wilson G. Stanford and Thomas B. Lantry, as Assistant Attorneys, under

Paragraphs 3 and 4 of Rule 54, as amended, as provided in the report; and the report was read.

Mr. Kelly, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed and placed on file, and the appointment of Messrs. Wilson G. Stanford and Thomas B. Lantry as Assistant Attorneys, as provided in the report, confirmed.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT :

"March 20th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago :

GENTLEMEN—The amendment of Paragraphs 3 and 4 of Rule 54, as made by your Honorable Body, requires the reassignment of two of the Assistant Attorneys already in the employ of the Board. I, therefore, designate Mr. Wilson G. Stanford to be the Assistant under Paragraph 3, and Mr. Thomas B. Lantry to be the Assistant under Paragraph 4 of said Rule 54 as amended, to take effect at date hereof, and ask that my action herein be approved by you.

Very respectfully

(Signed)

GEO. E. DAWSON,
Attorney."

DEDUCTIONS UNDER CLAUSE "J" OF CONTRACTS TO BE REPORTED TO BOARD.

Mr. Boldenweck, seconded by Mr. Altpeter, moved that the Chief Engineer be and he is directed to note hereafter on each contract estimate voucher the total amount of money retained by the District on the same, under Clause "J" of the respective contracts, and also the amount of such retention released on the same since the issuance of the last voucher, and that the Clerk be and he is directed to transmit hereafter said information to the Board on the list of said estimate vouchers presented.

On roll-call the vote stood: Yeas—Messrs Altpeter, Boldenweck, Eckhart, Gilmore and Kelly—five (5). Nays—Messrs. Cooley and Russell—two (2).

Upon which result, the President declared the motion carried, and the Chief Engineer and Clerk directed as provided therein.

ADJOURNMENT.

On motion of Mr. Cooley, seconded by Mr. Russell, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

March 27,]

—2593—

[1895.

PROCEEDINGS

—OF THE—

BOARD OF TRUSTEES

—OF THE—

SANITARY DISTRICT OF CHICAGO.

 APRIL 3, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and sixty-seventh regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, April 3, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Eckhart, Kelly, Prendergast, Russell and Wenter—six (6), and subsequently Mr. Cooley, making a total of seven (7) members, were present.

MINUTES.

The minutes of the regular meeting

held March 27, 1895, were approved as printed, on motion of Mr. Eckhart, seconded by Mr. Russell.

VOUCHERS.

The Clerk presented the following vouchers:

PAY ROLLS.

Eng. Dept., Chief Engineer's roll, (March, 1895).....	\$1,441 67
Eng. Dept., Div. No. 1, (March, 1895).....	5,622 60
Eng. Dept., Div. No. 2, (March, 1895).....	2,872 30
Eng. Dept., Div. No. 3, (March, 1895).....	966 50
Eng. Dept., Special roll, (March, 1895).....	690 83
Eng. Dept., Discharged Men's roll, (March, 1895).....	39 00
	<hr/> \$11,632 90

Clerical Dept., Clerk's roll, (March, 1895)...	\$ 891 67
Law Dept., Attorney's roll, (March, 1895)...	\$1,279 89
Law Dept., Joliet roll, (March, 1895).....	458 34
	<hr/>
Treasury Dept., Treasurer's roll, (March, 1895).....	\$ 166 66
General Account, General roll, (March, 1895).....	\$ 235 00
General Account, Towpath roll, (March, 1895).....	86 00
General Account, Trustees' roll, (March, 1895).....	2,333 33
	<hr/>
Police Dept., Marshall's roll, (March, 1895)...	\$ 3,746 70
	<hr/>
Total.....	\$20,830 49

ENGINEERING DEPARTMENT.

Stromberg, Allen & Co. (stationery).....	\$ 13 85
F. S. Webster Co. (carbon paper).....	3 00
Dennison Mfg. Co. (tags).....	3 45
Chas. Arnold, (paper boxes).....	18 00
Keuffel & Esser Co. (drafting material)...	6 99
W. A. Olmsted, (mounting maps).....	5 75
F. Mayer & Co. (blue prints).....	66 88
Treleaven Optical Co. (photo supplies).....	51 89
Treleaven Optical Co. (photo supplies).....	15 40
Walmsley, Fuller & Co. (photo supplies).....	4 00
Montgomery, Ward & Co. (scales).....	2 43
John Larney, (coal)...	6 00
Seelig & Kandler, (repairing tapes).....	3 95
Waukesha Hygeia Mineral Springs Co. (water).....	7 50
John McCaffery, (rent, Brighton Park, March, 1895).....	25 00
J. M. Abbitt, (rent, Willow Springs, March, 1895).....	20 00
Wm. Trinkaus, (expense).....	22 96
H. B. Alexander, (traveling).....	24 91
	<hr/>
	\$ 301 96

LAW DEPARTMENT.

John P. Wilson, (legal services, January-March, 1895).....	\$1,250 00
Jos. Donnersberger, (right of way expert services, March, 1895) \$	300 00
	<hr/>
	\$ 1,550 00

GENERAL ACCOUNT.

Thos. F. Judge, (expense).....	\$ 174 40
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POLICE DEPARTMENT.

Marshall Field & Co. (sheets).....	\$ 6 47
Grand total.....	<hr/>
	\$22,863 32

Mr. Kelly, seconded by Mr. Russell, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried and the vouchers, as read and shown above, approved and ordered paid.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending March 30, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, April 3, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending March 30, 1895, as the same have been reported to me:

Engineering Department.....	112
Clerical Department.....	4
Law Department	7
Treasury Department.....	1
Police Department.....	47
Telephone operator... ..	1
Towpath force.....	1

Total employes.....

173

Respectfully submitted,
(Signed) THOS. F. JUDGE,
Clerk.”

APPROVAL OF EMPLOYMENT OF CEMENT
INSPECTORS IN ADVANCE OF
AUTHORITY.

The Clerk presented a report from the Chief Engineer, asking the approval of his appointment of two (2) employes on cement inspection prior to the time of authority for same, granted at the meeting held March 20, 1895 (page 2586 of the Proceedings), and asking that payment for said employes be authorized; and the report was read.

Mr. Kelly, seconded by Mr. Eckhart, moved that the report be adopted, ordered printed and placed on file, the action of the Chief Engineer as set forth therein approved, and the payment of said employes authorized.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, the action of the Chief Engineer as set forth therein approved, and the payment of said employes authorized.

The following is

THE REPORT:

“CHICAGO, April 3, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—On March 13th (page 2576-7 of Proceedings), I asked for authority to employ certain warehouse men and cement inspectors. This request was not granted until the following meeting, on March 20th (page 2586 of Proceedings). Cement had begun to arrive before I made my request, and the need of help was imperative. After stating the facts to several members of your Honorable Body and getting their promise to sustain my action, I assigned two persons to the work before your order authorizing me to do so was passed. I therefore ask that you confirm my action and authorize payment.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer.”

REPORT ON CONSTRUCTION VOUCHERS ON
SECTIONS 2, 3 AND 4.

The Clerk presented a report from the Chief Engineer, with reference to and

returning the following construction vouchers:

McArthur Brothers (Section 2, March 16, 1895).....	\$10,801 00
Gilman & Company (Section 3, March 16, 1895).....	14,231 00
McArthur Brothers (Section 4, March 16, 1895).....	17,445 14

which were presented by the Clerk and referred back to the Chief Engineer at the meeting held March 27, 1895 (page 2590 of the Proceedings), said report verifying the vouchers for Sections 2 and 3, and noting certain corrections in that for Section 4; and the report was read.

Mr. Cooley, seconded by Mr. Eckhart, moved that the report be ordered printed and placed on file, the vouchers for McArthur Brothers, on Section 2, and for Gilman & Company, on Section 3, as returned, approved and ordered paid, and the voucher for McArthur Brothers, on Section 4, referred back to the Clerk, to be returned to the Chief Engineer for correction in accordance with the report just presented.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed and placed on file, the vouchers for McArthur Brothers, on Section 2, and for Gilman & Company, on Section 3, as returned, approved and ordered paid, and the voucher for McArthur Brothers, on Section 4, referred back to the Clerk, to be returned to the Chief Engineer for correction, in accordance with the report just presented.

The following is

THE REPORT:

“CHICAGO, April 3, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—Taking up the questions for the vouchers for Sections 2, 3 and 4, which were referred back to me on the 27th ult., I desire to make the following explanation: Those vouchers show no retention under Clause J, and the reason for this is that, as I understand this clause of the contract, the Board only can suspend it, but the contractor can earn exemption from it if he so conducts his work that there is not “a markedly greater proportion of the top material” excavated “than of the bottom material,” the clause then by its own provisions is void as affects the said work.

Taking the sections in question, I do not find that the difference in volume of material excavated from any class of material lying above the horizontal plane dividing the mass, is so materially greater under the methods of working pursued, which are reasonable and proper, that it would be reasonable and proper for me to deduct ten per cent of the difference in volumes provided for in Clause J, on Sections 2 and 3. On Section 4, after a conference with Mr. Miller, the engineer in charge, I am of opinion that a strict construction of the contract would require us to hold back 22,900 cubic yards, which at 49 cents equals \$11,221.00, but 4,900 cubic yards of this 22,900 belongs to the 27-cent material, and 18,000 to the 49-cent work, so that the correction would be:

4,900 cubic yards at 27 cents.	\$ 1,323 00
18,000 cubic yards at 49 cents.	8,820 00
	<hr/>
	\$10,143 00

On Section 2 the estimate shows that 598,680 cubic yards, or 85 per cent, of the Glacial Drift has been excavated; on Section 3, 298,800 cubic yards, or 84 per cent, of the Glacial Drift has been excavated, and on Section 4, 729,000 cubic yards, or 78 per cent, has been excavated.

In the rock the excavation is being carried to the bottom and the slopes are being worked with only a safe and proper distance between their faces.

*The vouchers are herewith returned.

Very respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

(Accompanied by three (3) vouchers.)

MONTHLY REPORT FROM TREASURY DEPARTMENT.

The Clerk presented a report from the Treasury Department for the month of March, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT :

"Balance on hand at date of last report....."	\$4,595,784.11
---	----------------

Received from South Town Collector, Sanitary District tax account.....	\$40,000.00
--	-------------

Received from Town of Jefferson Collector, Sanitary District tax account.....	\$ 2,591.69
Received from Town of Lake View Collector, Sanitary District tax account.....	9,265.06
Received from Town of Cicero Collector, Sanitary District tax account	4,986.28
Received from Town of Hyde Park Collector, Sanitary District tax account.....	26,899.47
Received from Town of Lake Collector, Sanitary District tax account.....	23,077.25
Received from Town of Lyons Collector, Sanitary District tax account.....	1,892.99
	<hr/>
	\$108,712.74

Received from American Trust and Savings Bank, interest for March.....	35.66
--	-------

Received from Metropolitan National Bank, interest for March....	1,527.00
--	----------

Received from Chicago National Bank, interest for March.....	1,564.15
--	----------

Received from Globe National Bank, interest for March.....	1,304.95
--	----------

Received from Ft. Dearborn National Bank, interest for March....	1,560.61
--	----------

Received from National Bank of Illinois, interest for March	1,473.32
	<hr/>
	\$ 116,178.43

Total cash received for month.....	\$4,711,962.54
------------------------------------	----------------

Total cash disbursed during month as per annexed schedules, viz:

Clerical Department....	\$ 968.36
Treasury Department..	188.66
Engineering Departm't.	12,071.25
Engineering—Construction Department.....	368,703.29
Law Department.....	3,944.70
General Account.....	3,502.32
Police Department.....	4,241.84
	<hr/>
	\$393,620.42

Balance this date, in banks as per schedule endorsed hereon	\$4,318,342.12
---	----------------

(Signed) MELVILLE E. STONE,
Treasurer.

CHICAGO, April 1st, 1895."

SCHEDULE :

Fort Dearborn National Bank.....	\$851,122.08
National Bank of Illinois.....	851,962.61
Chicago National Bank.....	850,638.08
Metropolitan National Bank.....	828,859.95

American Trust and Savings Bank.	21,003.79
Globe National Bank.....	914,755.61
Total..	<u>\$4,318,342.12</u>

APPROVAL OF ANNUAL REPORTS OF
CLERK AND TREASURER FOR 1894.

Mr. Eckhart, Chairman, presented a report from the Committee on Finance, with reference to and accompanied by the annual reports of the Clerk and Treasurer for 1894, with enclosures, presented and referred to that Committee at the meeting held January 16, 1895, (pages 2434 and 2444, respectively, of the Proceedings), recommending that said reports be approved and placed on file; and the report was read.

Mr. Eckhart, seconded by Mr. Russell, moved that the report be adopted, ordered printed, and, with enclosure, placed on file, and the recommendation made in the report concurred in.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT:

“CHICAGO, April 3, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—Your Committee on Finance, to whom were referred the annual reports of the Clerk and Treasurer for the year ending December 31, 1894, which reports were presented to your Honorable Body at the meeting held January 16, 1895 (pages 2434 and 2444, respectively, of the Proceedings), respectfully report that they have examined and compared the same and find them to be correct; and your Committee return the said reports herewith, with the recommendation that they be approved and placed on file.

Respectfully submitted,

(Signed)

B. A. ECKHART,

Chairman.

THOMAS KELLY,

W. H. RUSSELL,

Committee on Finance.”

(Accompanied by two annual reports, with tables).

PURCHASE OF “NORTON” LAND.

Mr. Eckhart, Chairman, presented a report from the Joint Committee on Fi-

nance and Engineering, with reference to the purchase from John L. Norton of certain right of way lands in Will County, and authorizing and directing the Clerk to pay for said right of way lands, on the voucher of the Attorney, as provided in the report; and the report was read.

Mr. Eckhart, seconded by Mr. Kelly, moved that the report be adopted, ordered printed, and placed on file, the recommendation made therein concurred in, and the Clerk authorized and directed to pay said John L. Norton, on the voucher of the Attorney, for said right of way lands as provided in the report.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, the recommendation made therein concurred in, and the Clerk authorized and directed to pay said John L. Norton, on the voucher of the Attorney, for said right of way lands, as provided in the report.

The following is

THE REPORT:

“CHICAGO, April 3, 1895.

*To the Honorable the Board of Trustees of
the Sanitary District of Chicago:*

GENTLEMEN—The Joint Committee on Finance and Engineering has reached an agreement with John L. Norton for the purchase from him, for the corporate purposes of this District, of the land herein-after described, for the sum of one thousand one hundred and fifty-six (\$1,156.00) dollars.

Your Committee recommend that the Clerk of this District be directed to pay, on the voucher of the Attorney, to said John L. Norton, the sum of one thousand one hundred and fifty-six (\$1,156.00) dollars, in full payment for the following described land, to-wit.

That part of the southeast quarter (S. E. $\frac{1}{4}$) of Section twenty-two (22), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, bounded and described as follows:

All that part of the south half (S. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) of said Section twenty-two (22), lying northwesterly of a straight line drawn from a point in the north line of the said south half

(S. $\frac{1}{2}$) of said southeast quarter (S. E. $\frac{1}{4}$) five hundred and seven and seven-tenths (507.7) feet east of the north and south center line of said section, to a point on said north and south center line three hundred and forty-eight and forty-eight hundredths (348.48) feet north of the south quarter (S. $\frac{1}{4}$) corner of said section, containing five and six hundred and seventy-five-thousandths (5.675) acres, more or less.

Also that part of the southwest quarter (S. W. $\frac{1}{4}$) of Section twenty-two (22) Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, bounded and described as follows:

Beginning at a point on the east (E) line of said southwest quarter (S. W. $\frac{1}{4}$) of said Section twenty-two (22), three hundred and forty-eight and forty-eight hundredths (348.48) feet north (N) of the southeast corner of said southwest quarter (S. W. $\frac{1}{4}$); thence running southwesterly in a direct line four hundred and fifty-two and twenty one-hundredths (452.20) feet to a point on the south line of the said southwest quarter (S. W. $\frac{1}{4}$) two hundred and eighty-six and forty-four hundredths (286.44) feet west of the said southeast corner of the said southwest quarter (S. W. $\frac{1}{4}$); thence east thirteen and seventy-hundredths (13.70) feet on said south line of said section; thence running northeasterly three hundred and ninety-six and sixty-seven

hundredths (396.67) feet on a straight line, which would pass through a point on the east line of said southwest quarter (S. W. $\frac{1}{4}$) three hundred and thirty-one and fifteen hundredths (331.15) feet north of the southeast corner of said southwest quarter (S. W. $\frac{1}{4}$); thence northeasterly in a direct line forty-eight and eleven hundredths (48.11) feet to the point of beginning; containing one hundred and five thousandths (.105) of an acre, more or less.

All of said land lying and being situate in the County of Will in the State of Illinois.

Respectfully submitted,

(Signed)

B. A. ECKHART,

Chairman.

THOS. KELLY,

JOHN J. ALTFETER,

W. H. RUSSELL,

L. E. COOLEY,

Joint Committee on Finance and Engineering."

ADJOURNMENT.

On motion of Mr. Kelly, seconded by Mr. Eckhart, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

APRIL 10, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and sixty-eighth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, April 10, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Cooley, Eckhart, Kelly, Russell and Wenter—six (6), and subsequently Mr. Prendergast, making a total of seven (7) members, were present.

MINUTES.

The minutes of the regular meeting held April 3, 1895, were approved as printed, on motion of Mr. Russell, seconded by Mr. Eckhart.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

CLAUSE "J"
Total Amount re-
Retained. leased on
this Voucher.

Construction Account—
Griffiths & McDermott, (Sec. 1, April 1,
1895).....\$11,249 99
McArthur Brothers, (Sec. 2, April 1, 1895) 10,220 00
Gilman & Company, (Sec. 3, April 1,
1895)..... 15,379 00
McArthur Brothers, (Sec. 4, March 16,
1895)..... 8,213 50

\$16,486 47

10,143 00 \$2,876 30

		CLAUSE "J."	
		Total Retained.	Amount re- leased on this Voucher.
McArthur Brothers, (Sec. 4, April 1, 1895)	\$ 11,202 63	\$10,143 00	
The Qualey Construction Co., (Sec. 5, April 1, 1895).....	6,905 50	8,361 00	
Mason, Hoge & Company, (Sec. 6, April 1, 1895).....	12,181 31	2,781 00	\$ 81 00
Mason, Hoge & Company, (Sec. 7, April 1, 1895).....	11,447 62		
Mason, Hoge, King & Co., (Sec. 8, April 1, 1895).....	16,416 97		
Halvorson, Richards & Co., (Sec. 9, April 1, 1895).....	15,745 28		
E. D. Smith & Co., (Sec. 10, April 1, 1895)	10,570 00		
Mason, Hoge & Company, (Sec. 11, April 1, 1895).....	7,558 47		
Mason, Hoge & Company, (Sec. 12, April 1, 1895).....	13,324 90		
Mason, Hoge & Company, (Sec. 13, April 1, 1895).....	8,306 59		
Smith & Eastman, (Sec. 14, April 1, 1895)	25,677 75		
Wright, Meysenburg, Sinclair & Carry, (Sec. 15, April 1, 1895).....	3,613 75		
Heldmaier & Neu, (Sec. A, April 1, 1895)	1,034 10	26,922 44	
Heldmaier & Neu, (Sec. B, April 1, 1895)	2,895 95	17,946 63	
Western Dredging & Improvement Co., (Sec. C, April 1, 1895).....	2,508 62		
E. D. Smith & Co., (Sec. D, April 1, 1895)	3,585 53		
Angus & Gindele, (Sec. E, April 1, 1895)	1,819 12	918 00	
Gahan & Byrne, (Sec. G, April 1, 1895)..	4,557 00	10,976 00	2,436 00
Gahan & Byrne, (Sec. H, April 1, 1895)..	1,596 34	4,480 79	
Christie & Lowe, (Sec. I, April 1, 1895)..	4,309 37	1,475 00	150 00
Christie & Lowe, (Sec. K, April 1, 1895).	6,540 63	4,600 00	225 00
The Heidenreich Company, (Sec. L, April 1, 1895).....	5,510 83	6,369 01	
The Heidenreich Company, (Sec. M, April 1, 1895).....	4,198 13	5,053 93	
		\$226,568 93	

ENGINEERING DEPARTMENT.

Pay roll, Special Service (March 31, 1895)	\$ 77 50
Keuffel & Esser Co., (drafting material).	\$ 50 52
Dennison Mnfg. Co., (tags).....	5 75
Isham Randolph, (postal cards).....	50 00
Seelig & Kandler, (repairing instru- ments).....	24 10
Henry Gebhardt, (cement boxes and benches).....	68 83
Robt. W. Hunt & Co., (cement sieves)...	31 00
Walmsley, Fuller & Co., (photo supplies)	11 61
H. S. Norton, (rent—Lemont, March, 1895).....	18 00
O. W. Moon, (rent—Lockport, March, 1895).....	20 00
E. Hastings, (gauge reading, March, 1895).....	10 00

Geo. Brainard, (gauge reading, March, 1895).....	\$ 10 00	
Wm. McGinnis, (gauge reading, March, 1895).....	10 00	
Mary Rusk, (gauge reading, March, 1895)	10 00	
Wm. Kirkham, (gauge reading, March, 1895).....	10 00	
Chicago Towel Supply Co., (toweling)...	5 40	
C. S. Austin, (ice).....	9 00	
G. W. Hill, (coal).....	17 25	
W. T. Keating, (traveling).....	20 60	
Chas. L. Harrison, (traveling).....	57 78	
		\$ 439 84

CLERICAL DEPARTMENT.

C. S. Austin, (ice).....	\$ 3 00	
Warner's Towel Supply, (toweling).....	1 50	
		\$ 4 50

LAW DEPARTMENT.

Frank Shepard, (law books).....	\$ 23 75	
Chicago <i>Daily Law Bulletin</i> , (subscription).....	3 00	
Chicago Job Book Bindery, (binding)...	4 80	
C. S. Austin, (ice).....	3 00	
Warner's Towel Supply, (toweling).....	1 50	
Chas. C. Prest, Receiver, Waukesha Hygeia Mineral Springs Co., (water)	3 75	
Chicago Telephone Co., (tolls).....	9 20	
George E. Dawson, (expense).....	24 70	
		\$ 73 70

GENERAL ACCOUNT.

John F. Higgins, (printing proceedings, etc., March, 1895).....	\$ 61 92	
The Western News Co., (subscriptions).	3 55	
Chicago Telephone Co., (service, Chicago to Lockport, April-July, 1895).....	764 17	
		\$ 829 64

POLICE DEPARTMENT.

Ryan & Hart, (printing).....	\$ 5 00	
Warner's Towel Supply, (towels).....	5 10	
J. R. Davis & Son, (boring well, Forty-eighth street).....	178 50	
		\$ 188 60
Grand total.....		\$228,182 71

Mr. Eckhart, seconded by Mr. Kelly, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried and the vouchers, as read and shown above, approved and ordered paid.

REQUISITIONS.

The Clerk presented the following requisitions:

No. 489, Law Department, (stationery).....	\$ 11 75
No. 521, Engineering Department, (lumber).....	84 00
No. 522, Engineering Department, (sundries)	253 66
No. 713, Treasury Department, (canceling stamp).....	6 00
Total.....	\$ 355 41

Mr. Kelly, seconded by Mr. Eckhart, moved that Requisitions No. 489, for the Law Department, and No. 713, for the Treasury Department, as read and shown above, be allowed.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and Requisitions No. 489, for the Law Department, and No. 713, for the Treasury Department, as read and shown above, allowed.

Mr. Kelly, seconded by Mr. Eckhart, then moved that Requisitions Nos. 521 and 522, for the Engineering Department, as read and shown above, be referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and Requisitions Nos. 521 and 522 for the Engineering Department, as read and shown above, were so referred.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending April 6, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, April 10, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending April 6, 1895, as the same have been reported to me:

Engineering Department.....	113
Clerical Department.....	4
Law Department.....	7
Treasury Department.....	1
Police Department.....	47
Telephone operator.....	1
Towpath force.....	1

Total employes..... 174

Respectfully submitted,

(Signed) THOS. F. JUDGE,

Clerk.”

MONTHLY REPORT FROM CLERICAL DEPARTMENT.

The Clerk presented a report from the Clerical Department for the month of March, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, April 10, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have the honor to herewith report that the total amount expended on account of and charged to the Clerical Department during the month of March, 1895, was \$946.11, divided as follows:

Salaries.....	\$891 67
Stationery.....	45 69
General expenses.....	8 75
Total.....	<u>\$946 11</u>

There are no outstanding liabilities, and the expenses for the present month will, from present indications, be about \$950.

The total amount expended and charged to the General Account during the month of March, 1895, was \$2,936.10, divided as follows:

Salaries.....	\$2 676 33
Printing.....	153 02
Advertising.....	28 90
Electric lighting.....	49 85
Legislative inspection trip.....	28 00
Total.....	<u>\$2 936 10</u>

There are no outstanding liabilities against the General Account, and the expenses for the present month will be about \$4,500.

During the month of March, 1895, there were warrants authorized and drawn against the various accounts for \$295,568.60, as follows:

Engineering Department.....	\$12,267 65
Clerical Department.....	946 11
Law Department.....	3 784 55
Treasury Department.....	188 66
General Account.....	2,936 10

Engineering Department (Construction Account).....	\$271,143 04
Police Department.....	4,302 49
Total.....	<u>\$295,568 60</u>

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

REQUISITION FOR ADDITIONAL MEN FOR
SPECIAL SERVICE—INSPECTION OF
MASONRY RETAINING WALLS.

The Clerk presented a report from the Chief Engineer, making requisition for twenty-three (23) men for Special Service (inspection of masonry retaining walls) additional to those provided by the Rules, as set forth in the report; and the report was read.

Mr. Cooley, seconded by Mr. Russell, moved that the report be adopted, ordered printed, and placed on file, and the requisition made therein allowed.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Kelly, Prendergast, Russell and Wenter—six (6). Excused and not voting—Mr. Eckhart—one (1). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and placed on file, and the requisition made therein allowed.

The following is

THE REPORT:

“CHICAGO, April 10, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—The contractors for retaining wall are ready to commence as soon as permitted to do so by us. We shall have to organize for this work at once and I therefore ask for authority to employ 1 Sub-Assistant Engineer, 1 Instrument man and 3 Sub-Instrument men, and 18 Inspectors. We shall need all of these within a week and the force will have to be increased from time to time as the volume of the work increases.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

MONTHLY REPORT FROM LAW DEPARTMENT.

The Clerk presented a report from the Law Department for the month of March, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, April 10, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—I submit herewith the monthly report for March, 1895.

The total amount paid out by this Department during the month is as follows:

SALARIES.

Attorneys.....	\$1,300 00
Office force.....	345 00
	<u>\$1,645 00</u>

GENERAL EXPENSES.

Court costs.	\$1,009 55
Right of way.....	537 90
General expenses...	39 00
Printing and stationery.....	553 10
	<u>\$2,139 55</u>

Total..... \$3,784 55

The defendants in the case of the Sanitary District vs. Carl Moll et al. had the suit regularly reinstated in the Circuit Court of DuPage County and then renewed their motion for a change of venue from the county. After a careful consideration of all the circumstances of the case and of the probable action of the court, I stipulated that the case might be sent to the Circuit Court of Will County, and it was so ordered.

In the case of Johnson et al. vs. Sanitary District et al., taken to the Appellate Court, a decision has been rendered by that court written by Judge Waterman, by which the decision of the lower court is fully sustained, the court holding that the Trustees of the Sanitary District are better qualified to determine what bids should be accepted and what rejected than a Court of Chancery can be; that the determination as to who is the lowest responsible bidder in the letting of contracts is an exercise of a discretion vested in them which cannot be reviewed by a Court of Chancery except on the ground of fraud.

The hearing of the preliminary matters in the suit of the District vs. Norton et al. has been entered upon, and preparation for the trial which is to follow have been undertaken.

For the coming month the trial of this suit, preparations for the remaining suits and routine work will occupy the Department.

Respectfully submitted,

(Signed) GEO. E. DAWSON,
Attorney."

PROPOSITION TO PURCHASE STONE EXCAVATED FROM MAIN CHANNEL

The Clerk presented a communication from the Carbonized Stone Company of Chicago, by George Richardson, General Manager, making proposition for the purchase of portion of the stone excavated from the Main Channel, as set forth in the communication; and the communication was read.

Mr. Cooley, seconded by Mr. Kelly, moved that the communication be ordered printed and referred to the Committee on Finance.

The motion prevailed unanimously, and the communication was ordered printed and so referred.

The following is

THE COMMUNICATION:

"CHICAGO, April 9, 1895.

To the Honorable Board of Drainage Commissioners:

GENTLEMEN—We are desirous of getting enough stone from along side of the Drainage Canal to ship to our Dock at Webster Avenue Bridge in this city to keep a Plimpton Stone Crusher running.

We can't use any stone larger than 8 by 14 inches, and will require from that size down. We are willing to pay you \$200 per month in advance for sufficient stone to run our crusher and take the stone away at our expense and will guarantee not to take away any stone larger than 8 by 14 inches.

Hoping that you will accommodate us with the stone, we are, etc.,

(Signed) *Carbonized Stone Co. of Chicago.*

Per GEORGE RICHARDSON,
Gen. Manager."

ADJOURNMENT.

On motion of Mr. Kelly, seconded by Mr. Altpeter, the Board then adjourned.

THOS. F. JUDGE,
Clerk.

PROCEEDINGS

—OF THE—

BOARD OF TRUSTEES

—OF THE—

SANITARY DISTRICT OF CHICAGO.

APRIL 17 AND 19, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and sixty-ninth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, April 17, 1895, at 2:00 o'clock P. M.

In the absence of the President, the Clerk called the Board to order.

On roll call Messrs. Altpeter, Boldenweck, Cooley and Russell—(4) members, were present. No quorum.

ADJOURNMENT TO SPECIAL TIME.

Mr. Boldenweck, seconded by Mr. Russell, moved that the Board adjourn to meet Friday, April 19, 1895, at 2 o'clock P. M.

The motion prevailed unanimously, and the Board stood adjourned to meet Friday, April 19, 1895, at 2 o'clock P. M., pursuant to motion.

THOS. F. JUDGE,

Clerk.

ADJOURNED MEETING.

The adjourned session of the two hundred and sixty-ninth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Friday, April 19, 1895, at 2 o'clock P. M., pursuant to motion.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wenter—six (6), and subsequently Mr. Cooley, making a total of seven (7) members, were present.

MINUTES.

The minutes of the regular meeting held April 10, 1895, were approved as printed, on motion of Mr. Kelly, seconded by Mr. Boldenweck.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending April 13, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, April 19, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending April 13, 1895, as the same have been reported to me:

Engineering Department.....	117
Clerical Department.....	4
Law Department.....	7
Treasury Department.....	1
Telephone operator.....	1
Towpath force.....	1
Police Department.....	47

Total employes..... 178

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

PAYMENT OF FINAL SUBSCRIPTION TO DISTRICT TELEPHONE SYSTEM.

The Clerk presented a report, accompanied by one completed contract and receipt from Treasurer Stone for fifty (\$50) dollars, being in full of the balance of all money received by him from parties, for one year's use of the District telephone system, as set forth in the report; and the report was read.

Mr. Boldenweck, seconded by Mr. Kelly, moved that the report and accompanying receipt be ordered printed, and, with accompanying contract, placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT, WITH ACCOMPANYING RECEIPT:

"CHICAGO, April 19, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have to report that one additional firm, Franklin MacVeagh & Company, has subscribed for the use of the District Telephone system, paying fifty (\$50) dollars for the year ending August 14, 1895, as provided in the report of the Joint Committee on Finance and Engineering, adopted at the meeting held October 24, 1894 (page 2277 of the Proceedings).

In conformity with the directions contained in said report, I have deposited with the Treasurer the sum of fifty (\$50) dollars, to be credited to the District and the General Account (telephone service) thereof, the receipt for which is hereto attached and made part of this report.

I also transmit for filing the contract mentioned above, duly executed, this being the last contract of that kind which the Telephone Company will allow us to accept, the line now carrying as many subscribers as possible to operate with, making in all six (6) contractors and five (5) firms.

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

(Enclosing receipt and contract.)

"CHICAGO, April 12, 1895.

Received of Thos. F. Judge, Clerk of the Sanitary District of Chicago, Check No. 93820, drawn by Franklin MacVeagh & Company on the Commercial National Bank, in the sum of fifty (\$50) dollars, payable to the order of the Sanitary District of Chicago, in full of money received from said MacVeagh & Company for the use of District telephone line, in accordance with report of Joint Committee on Finance and Engineering; the same to be credited to the Sanitary District of Chicago and the General Account (telephone service) thereof.

(Signed) MELVILLE E. STONE,
Treasurer of the Sanitary District of Chicago.

By A. B. CLEGHORN,
Assistant Treasurer."

MONTHLY REPORT FROM ENGINEERING DEPARTMENT.

The Clerk presented a report from the Engineering Department (accompanied by classified statement) for the month of March, 1895.

The report was read, and, by unanimous consent, was ordered printed, and, with accompanying classified statement, placed on file.

The following is

THE REPORT:

"CHICAGO, April 17, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I herewith transmit the reports of the Divisions of Construction and Drafting and Designing, showing the detailed operations of the Engineering Department for the month of March, 1895; also a classified statement of expenses to April 1st, 1895.

The expenses for the month of March were as follows:

Salaries.....	\$ 11,785 40
Supplies, etc.....	853 52
Regular contractors' estimates.....	380,124 17
Extra contractors' estimates.....	300 00
	<hr/>
	\$393,063 09

I estimate the expenses of this department for the month of April will be \$525,000.00.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

(Accompanied by classified statement.)

"CHICAGO, April 18, 1895.

Mr. Isham Randolph, Chief Engineer:

DEAR SIR—I beg to submit herewith my report of the Construction Department for the month of March. The frost had penetrated the ground to such an extent that it greatly retarded operations on the earth sections during the entire month, and required the liberal use of explosives to get the material in such condition that it could be handled. Under these circumstances those earth sections, which are adequately equipped, made exceptionally good progress.

Sections O and N are still inaccessible

for dredging operations, and nothing was done thereon.

On Section M 32,400 cubic yards were excavated, and on Section L 53,900 cubic yards, a total of 86,300 yards for the two sections, which is in excess of the contract requirements. The equipment on these sections seems to be sufficient to insure their completion during the current year.

Sections K and I show an output of 40,000 cubic yards and 28,100 cubic yards, respectively, a total of 68,100 cubic yards. They are much in advance of contract requirements with ample equipment, and should also be finished during the present season.

But little was done on Sections H and G save in providing and installing further plant. The Mason & Hoover conveyor, which was wrecked by the storm of January 21st, is being rebuilt. They have also built a truss bridge to facilitate handling and moving the Belt conveyor; have completed a large steel incline on Section G and have another in course of construction on Section H. The estimate for these sections gives 6,990 yards for Section H and 9,900 yards for Section G, a total of 16,890 yards during the month.

Nothing was done on Section F other than work of preparation. To this end two inclines and truss bridges of the Christie & Lowe design are being erected. A pit has also been excavated across the Channel down to grade for the introduction of steam shovels, and a pumping plant established.

Work on Section E was continued with two steam shovels, the excavated material being removed to the spoil bank with locomotives and large dump cars. The contractors are building a large excavator of the steam shovel type, though about double the size of the latter. The estimate for the month credits the section with 8,100 cubic yards. The total amount excavated to date by the present contractors is 76,900 cubic yards. The average monthly requirement under the contract is 79,070 cubic yards.

Section D is the only earth section on which work was not suspended during the severe winter weather. The section contains 2,015,415 cubic yards, of which 1,204,900 yards—about three-fifths—have been excavated, and the contractors expect to complete the work this season. The output for the month was 30,500 cubic yards.

The equipment on Section C has been reinforced by an additional steam shovel and steam hoist and incline which should materially increase the output. The estimate for the month gives 15,200 cubic yards.

Though Sections B and A are still far in arrears, owing to the difficulty in completing the trestle levee and inclement weather, great improvement may now be reasonably expected. A large pumping plant has been established for the purpose of unwatering Section A. A force is also at work transferring the hydraulic dredges to the Illinois and Michigan Canal by a system of improvised locks. This work will probably occupy about all the month of April. Meantime arrangements have been made for unwatering the greater part of Section A so that work thereon may be inaugurated during the current month. The output for the month was a little over 22,000 cubic yards.

The plant on Section 1 has been materially increased during the winter and much more efficient results may be expected. They have four steam shovels, five locomotives, eighty dump cars, three large inclines (Heidenreich pattern), two dynamos, two channellers, power drills, pumps, etc. Two of the steam shovels are operated in connection with inclines and the other two are attended by locomotives and cars. The third incline is of steel, especially constructed for taking out rock, and at this writing another similar incline is nearly completed for use in the rock excavation which is now being opened. The March estimates give this section 53,900 cubic yards of glacial drift excavation.

The work on Section 2 was confined to rock excavation of which there were excavated 25,500 cubic yards. This is about equal to the monthly requirement and should be largely exceeded when earth excavation is resumed.

Section 3 continues to gain at a rate that, if maintained, will soon cover its delinquency. The excavation for the month was 4,500 yards of glacial drift and 39,000 yards of rock—a total of 43,500 cubic yards.

The greater part of Section 4 is glacial drift, in which but little work was done during the month, owing to the disabling of the steam shovels in attempting to handle the material before free from frost.

The output for the month was 6,700 yards of glacial drift and 19,200 yards of rock—a total of 25,900 cubic yards.

Section 5 shows an increase of total yardage excavated over any of the preceding four months excepting January, and with improved weather and condition of the work much better results should now be attained. The quantities excavated were 10,800 yards of glacial drift and 11,900 yards of rock—a total of 22,700 cubic yards.

Section 6 earned in March the largest monthly estimate since in the hands of the present contractors. The work of dry excavation has heretofore been confined to that half of the section east of the Bracken Bank. The other half, west of said bank, has now been unwatered, and although the rock is overlaid with a greater quantity of difficult glacial drift than was anticipated, I believe that full progress rates may be expected hereafter. The estimates for March give 4,900 yards of glacial drift and 31,800 yards of rock—a total of 36,700 cubic yards.

Section 7 shows a decided increase over any of the previous four months. It is about one month in arrears, according to the contract rating, but is fairly equipped and the maintenance of progress may at least be relied on. The excavation was wholly in solid rock and amounted to 31,000 cubic yards.

Section 8, though yet about three weeks behind the contract requirement, shows a decided gain for the month. It is fully equipped and will probably be completed within the present year. Its output for the month was 44,200 cubic yards of solid rock.

Section 9 has in the last twelve months done twenty-three and one-half months' work, according to the contract rating. It is now nearly two months in advance of its requirements, and will doubtless be finished this season. The output for the month was 46,700 cubic yards of rock.

Section 10 is also far in advance of its requirements, and is credited with an estimate of 33,600 cubic yards of rock.

Section 11, on the 1st inst., showed an excess of about one month over its requirements and will maintain, if not better, its standing. Eighteen thousand eight hundred cubic yards of rock were excavated during the past month.

Section 12 is in about the same condition as the preceding section. Its estimate for the month was 2,661 yards of glacial drift and 40,000 yards of rock, a total of 42,661 cubic yards.

Section 13 is about five months in excess of its contract requirement, and is likely to maintain this lead. The estimate for the month gives it 22,700 cubic yards of rock.

Section 14 shows a very satisfactory improvement over any preceding month, and sustains my recent prediction as to probable results. Its output for the month was 62,000 cubic yards of rock, and at the present rate of operation will, for the current month, probably exceed the highest output yet attained in the solid rock sections.

Section 15 shows a little improvement, though it is only about 29 per cent of the monthly rating, and the section is far behind its requirement. Up to this time the

broken rock has been loaded with steam shovels, two of which are now employed for that purpose. However economical such method may be, the present equipment is wholly insufficient to perform the work within the required time. The contractors seem to appreciate this condition, and give assurances that the necessary additional appliances will be provided by the first of May to recover lost time and maintain progress. The quantity of rock excavated during the month was 11,600 cubic yards.

From present indications all of the solid rock sections, from 8 to 13 inclusive, will be finished during the present year, with Sections 7 and 14 likely to follow very closely.

Respectfully submitted

(Signed)

U. W. WESTON,
Supt. of Construction."

STATEMENT SHOWING AMOUNT OF WORK DONE DURING THE MONTH OF MARCH, 1895—(MAIN CHANNEL).

SECTIONS.	Amount Done During March.	Average Monthly Requirement.	Deficiency for March.	Excess Over Monthly Requirement.	Per Cent. of Monthly Requirement.
O.....		\$13,271 42	\$13,271 42		0.0
N.....		10,674 33	10,674 33		0.0
M.....	\$ 7,030 80	6,274 34		\$ 756 46	112.
L.....	10,618 30	8,682 82		1,935 48	122.
K.....	10,000 00	11,559 57	1,559 57		87.
I.....	7,025 00	11,398 49	4,373 49		62.
H.....	2,027 10	12,493 57	10,466 47		16.
G.....	2,772 00	15,277 64	12,505 64		18.
F.....		13,493 77	13,493 77		00.
E.....	2,187 00	23,230 53	21,043 53		9.
D.....	8,063 43	19,215 65	11,152 22		42.
C.....	3,572 00	13,443 10	9,871 10		27.
B.....	4,784 40	12,901 32	8,116 92		37.
A.....	1,312 89	24,012 30	22,699 41		5.
1.....	23,123 10	44,801 03	21,677 93		52.
2.....	20,400 00	20,950 88	550 88		97.
3.....	32,160 00	29,177 70		2,982 30	110.
4.....	18,643 00	22,982 67	4,339 67		81.
5.....	12,094 50	18,387 51	6,293 01		66.
6.....	24,696 00	26,827 41	2,131 41		92.
7.....	22,785 00	25,622 15	2,837 15		89.
8.....	33,039 50	21,799 22		11,240 28	152.
9.....	35,912 30	19,325 00		16,587 30	186.
10.....	26,880 00	22,458 34		4,421 66	120.
11.....	14,899 00	19,455 05	4,556 05		77.
12.....	32,504 95	20,413 93		12,091 02	159.
13.....	16,968 25	21,140 02	4,171 77		80.
14.....	45,260 00	22,648 61		22,611 39	200.
15.....	6,844 00	23,607 65	16,763 65		29.
Totals.....	\$425,602 52	\$555,526 02	\$ 202,549 39	\$72,825 89	76.61

TABLE OF AMOUNT OF WORK DONE (INCLUDING RIVER DIVER)

SECTIONS.	CONTRACTORS.	MAIN CHANNEL.		RIVER DIVERSION.		RUBBLE MASONRY.
		Glacial Drift.	Solid Rock.	Glacial Drift.	Solid Rock.	
		Cubic Yds.	Cubic Yds.	Cubic Yds.	Cubic Yds.	
		Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	
O	McMahon & Montgomery Co. et al.	518,821		17,600		
N	Hayes Bros. et al.	71,300				
M	The Heidenreich Co.	405,500				
L	The Heidenreich Co.	576,700				
K	Christie & Lowe	476,000				
I	Christie & Lowe	753,400				
H	Gahan & Byrne	154,508				
G	Gahan & Byrne	553,900				
F	Weir, McKechney & Co.	504,293		158,234		
E	Angus & Gindele	546,063		95,718		
D	E. D. Smith & Co.	1,204,900				
C	Western Dredging & Imp. Co.	828,663		162,587		
B	Heldmaier & Neu.	664,689		212,486		
A	Heldmaier & Neu.	879,103		124,288		
1	Griffiths & McDermott	505,766		5,876		
2	McArthur Bros.	589,680	93,400	29,516		
3	Gilman & Co.	365,910	299,500			
4	McArthur Bros.	735,700	47,900			
5	The Qualey Construction Co.	589,300	56,400			1,300
6	Mason, Hoge & Co.	555,000	125,300	112,700		1,300
7	Mason, Hoge & Co.	169,600	436,400	97,000	41,800	
8	Mason, Hoge, King & Co.	41,600	741,600	56,600	96,900	
9	Halvorsen, Richards & Co.	71,700	711,700	37,700	16,000	
10	E. D. Smith & Co.	29,200	945,800	27,400	56,500	
11	Mason, Hoge & Co.	44,032	690,400	5,756	11,483	
12	Mason, Hoge & Co.	30,061	733,900	11,739		
13	Mason, Hoge & Co.	32,822	925,400			
14	Smith & Eastman	343,700	438,500			
15	Wright, Meysenburg, Sinclair & Carry	29,500	35,400			
Totals		12 271 411	6,279,600	1,149,150	222,683	2,600

Main Channel, glacial drift.....	1.00
Main Channel, solid rock.....	1.00
River Diversion, glacial drift.....	1.00
River Diversion, solid rock.....	1.00
Rubble Masonry.....	1.00

Total amount required to be done April 1st, 1895.....
Total amount done April 1st, 1895.....

Total amount short as per contracts.....

Total value of work done under contracts April 1st, 1895.....	
Reserved.....	$\left\{ \begin{array}{l} 12\frac{1}{2} \text{ per cent.} \\ 10 \text{ per cent.} \end{array} \right.$

Total value of vouchers paid, including those of April 1st, 1895.....
Total value of vouchers paid for collateral work, including those of

Total disbursement, Construction Account.....

NOTE.—*Overhaul to Levee—Section 1 not included. †Overhaul to

SION) AND CONDITION OF WORK ON CONTRACTS APRIL 1ST, 1895.

Total value of work done to April 1st, 1895, on each section.	Total value of work required to be done to April 1st, 1895.	Amounts behind as per contracts.	Amounts ahead as per contracts.	Average monthly progress called for in contracts.	Average monthly progress necessary Jan. 1st, 1895, to time of completion.	Progress made during month of March, 1895.
\$110,464 81	\$158,026 00	\$ 47,561 19	.....	\$14,366 00	\$14,644 94	.....
16,399 00	117,417 63	101,018 63	.....	10,674 33	14,986 56	.....
87,993 50	75,292 08	.....	\$ 12,701 42	6,274 34	5,140 87	\$ 7,030 80
113,609 90	104,193 84	.....	9,416 06	8,682 82	7,926 55	10,618 30
119,000 00	138,714 84	19,714 84	.....	11,559 57	11,583 70	10,000 00
188 350 00	136,781 28	.....	51,568 12	11,398 49	7,178 89	7,025 00
44,807 32	149,922 84	105,115 52	.....	12,498 57	16,957 53	2,027 10
155,092 00	183,331 68	28,239 68	.....	15,277 64	14,632 96	2,772 00
157,350 16	170,843 93	13,493 77	.....	13,493 77	13,493 77	.....
176,105 28	294,725 46	118,620 18	.....	23,230 53	26,990 69	2,187 00
318,545 44	403,528 65	84,983 21	.....	19,215 65	22,571 94	8,063 43
232,932 00	308,609 91	75,677 91	.....	14,695 71	17,360 69	3,672 00
236,837 25	307,389 18	70,551 93	.....	14,637 58	17,638 83	5,151 60
308,513 49	529,259 85	220,746 36	.....	25,202 85	35,435 74	1,312 89
*199,679 36	482,824 96	283,145 60	.....	44,801 03	55,635 03	23,123 10
371,376 28	549,963 96	178,587 68	.....	21,152 46	30,636 53	20,400 00
411,269 70	486,636 90	75,367 20	.....	29,177 70	33,936 03	32,160 00
388,143 00	620,532 09	232,389 09	.....	22,982 67	36,357 44	18,643 00
218,390 00	487,269 02	268,879 02	.....	18,387 51	32,729 52	12,094 50
275,394 50	379,459 43	104,064 93	.....	26,896 13	32,371 16	24,696 00
420,793 00	449,653 12	28,860 12	.....	25,699 42	26,037 97	22,785 00
652,310 75	671,412 84	19,102 09	.....	23,979 03	26,264 41	33,039 50
588,045 30	557,206 44	.....	30,833 86	19,900 23	21,128 85	35,912 30
815,990 00	665,847 00	.....	150,143 00	23,780 25	14,817 52	26,880 00
571,303 15	552,145 16	.....	19,157 99	19,719 47	17,553 87	14,899 00
594,260 25	574,015 12	.....	20,245 13	20,500 54	20,959 47	32,504 95
700,270 22	591,920 56	.....	108,349 66	21,140 02	12,819 77	16,968 25
421,321 00	634,161 08	212,840 08	.....	22,648 61	38,123 95	45,260 00
26,491 00	141,645 90	115,154 90	.....	23,607 65	27,107 35	6,844 00
\$8,921,037 66	\$10,922,731 35	\$2,404,113 93	\$402,420 24	\$565,575 57	\$653,022 53	\$425,969 72

Cubic Yards.

.....	12,271,411
.....	6,279,600
.....	1,149,150
.....	222,683
.....	2,600
.....	\$10,922,731 35
.....	8,921,037 66
.....	\$2,001,693 69
.....
.....	\$8,921,037 66
.....	\$1,096,360 32
.....	121,407 30
.....	1,217,767 62
.....
.....	\$7,703 27 04
.....	†627,500 01
.....	\$8,330,770 05

Levee—Section 1 included. †Collateral Channel.

"CHICAGO, April 10, 1895.

Mr. Isham Randolph, Chief Engineer:

DEAR SIR—The work of the Division for Drafting and Designing for the month of March, 1895, was as follows:

The preparation of plans for regulating works, tail race and Channel through Joliet, was continued and instructions pertaining to construction of retaining walls were prepared.

The survey party has, during the month, located a number of new structures, adjacent to the Chicago River, erected since the Chicago River survey was completed. The survey for these structures is connected with the points of the Chicago River survey. The work has been platted and is to be transferred to the Chicago River maps.

Additional surveys along the South Fork of the South Branch have also been made, and the reduction of notes is now in progress.

The work on plats and profiles of the Illinois and Michigan Canal and the Illinois River was continued.

A cement testing force was organized and the testing of cement for use in retaining walls is now in progress.

The work of preparing record photographs was continued, as was also the maintenance of water gauges.

Work was continued during the month on the plat books and the map of the Lower Illinois River.

Six maps and sections were finished for the Navy Department, a map of Sag Island, showing the condemned pieces of land and the location of the Canal was made for use in the field, and a diagram of the triangulation surveys of the Sanitary District for the records.

Made a plat of the crossing of the Chicago, Santa Fe and California Railroad over the Canal; two maps of the Desplaines and Illinois Rivers from Joliet south, and a tracing of the profile of the Illinois River, from Marseilles to Grafton, showing the high and low water lines.

Prepared for the Law Department a map of the valley between Contract Section 14 and Joliet, showing the names of owners; a map showing the land covered by ordinance between Lockport and Joliet; a plan of the embankment below Contract Sec-

tion 15; three tracings of right-of-way maps near Lockport; one set of right-of-way maps between Chicago and Joliet; a map showing the lines of the Government and other surveys on Sag Island; a tracing of the original map of Witt's survey of parts of Sag Island; three colored maps of Sag Island tracts and a large scale tracing and estimate of acreages of several pieces of land on Sag Island.

The expense of April will approximate to that of March.

Respectfully,

(Signed) THOS. T. JOHNSTON,
Assistant Chief Engineer."

ANNOUNCEMENT OF DEATH OF ENGINEER J. C. NICKSON.

The Clerk presented a report from the Chief Engineer, notifying the Board of the death of Mr. J. C. Nickson, Engineer, connected with that Department for nearly five years.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, April 16, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—It is with deep regret that I advise you of the first death which has occurred in the ranks of our Engineers since I became connected with this District.

On Friday, the 12th inst., Mr. J. C. Nickson died at his home in Austin after a long and wasting illness. He entered the employ of this District in October, 1890, since which time his service has been continuous and distinguished for its fidelity and efficiency.

Respectfully reported,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

FOURTH ADDITIONAL EXTENSION OF TIME ON COMPLETION OF LEVEES ON SECTIONS I AND A.

The Clerk presented a report from the Chief Engineer, asking a fourth extension of time, additional to that granted at the meeting held January 9th, 1895, (page 2417 of the Proceedings) to May 20, 1895, as set forth in the report, for

the completion of the River Diversion levees on Sections 1 and A, under contracts with Griffiths & McDermott and Heldmaier & Neu; and the report was read.

Mr. Boldenweck, seconded by Mr. Russell, moved that the report be adopted, ordered printed, and placed on file, and the extension of time to May 20, 1895, asked for therein, granted.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, and the extension of time to May 20, 1895, asked for therein, granted.

The following is

THE REPORT:

“CHICAGO, April 16, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The work of completing the levee on Sections 1 and A was suspended last winter by my order, because the frozen material was not fit to finish it with. Now, however, the frost is out and work has been renewed. I therefore ask for an order extending the time of completion to May 20th so that the work may be properly estimated and paid for, this order to apply to the work done both by Griffiths & McDermott and Heldmaier & Neu.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer.”

REQUISITION FOR ADDITIONAL PAMPHLET HISTORIES OF THE DISTRICT.

The Clerk presented a report from the Chief Engineer, asking permission to print and issue 10,000 additional copies of the Pamphlet History of the District, corrected to April 1, 1895, as set forth in the report; and the report was read.

Mr. Boldenweck, seconded by Mr. Russell, moved that the report be ordered printed and referred to the Committee on Rules, with power to act.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and the report

ordered printed and referred to the Committee on Rules, with power to act.

The following is

THE REPORT:

“CHICAGO, April 17, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Our stock of pamphlets descriptive of the Channel is practically exhausted, as we have only a few dozen left. The demand for this pamphlet is on the increase. I have requests now for about 5,000 for various educational institutions in and near the city.

In view of these facts I ask permission to issue about 10,000 copies corrected to April 1st.

Your very respectfully,

(Signed) ISHAM RANDOLPH,
Chief Engineer.”

RE MEASUREMENT OF ALL CONSTRUCTION WORK ON MAIN CHANNEL.

The Clerk presented a report from the Chief Engineer, suggesting a re-measurement by a special engineer and special party, under conditions as set forth in the report, of the entire construction work of the Main Channel; and the report was read.

Mr. Eckhart, seconded by Mr. Kelly, moved that the report be ordered printed and referred to the Joint Committee on Engineering and Finance, and that the President be directed to communicate with the Western Society of Engineers, of Chicago, and request that body to suggest the names of six (6) engineers whom they would recommend to be placed in charge of such a re-measurement.

The motion prevailed unanimously, and the report was ordered printed and so referred and the President so directed.

The following is

THE REPORT:

“CHICAGO, April 17, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I wish to bring to your notice the propriety of making the best possible checks within our power on the estimates of the work of this Channel. Prior to my being placed in charge of the Engineering Department my acquaintance with the men who are associated with me, in immediate charge of the work, was of the most casual kind.

Two years of association with them has impressed me with a thorough belief in their integrity of character and their professional ability, so that I have the utmost confidence in the thorough reliability of their work; but the magnitude of the interests at stake is so great that I feel it is due to them as well as myself and to your Honorable Board that nothing should be omitted which would in any measure safeguard these interests and the reputation of the men having them in charge.

Under our present system of checking—the clerical workings of the department—it is next to impossible for a mistake in computation to go undiscovered, and this check should be supplemented by independent measurements of the Channel itself. Therefore I would suggest that I be authorized to have these check measurements made and the results carefully computed and compared with the returns which we already have. For this work I would strengthen the survey party which we now have, a party which has had no connection whatever with construction work, and starting them in at Robey street let them remeasure and cross-section the entire line. It must be borne in mind that no entirely original measurements now made will check out with our estimates because of the removal of the original surface elevations. The surface found on each side of the Channel would have to be taken and the computations made on the supposition that the original surface plane lay in a straight line between the points used, and moreover the points actually taken would vary from the surface originally found by reason of the ground having been tramped and worked over. The same difficulty of accurate determination of the dividing line between Glacial Drift and Solid Rock would also be found to an even greater degree. The utility therefore of what I propose would be in detecting flagrant error, for unless flagrant error can be shown, the original notes must govern in all cases.

I would recommend, further, that the party organized as herein before suggested, be placed in charge of an engineer of recognized ability and high character not now connected with our organization, under whose direction the remeasurements and computations should be conducted and who should certify the result of the work either to the Chief Engineer or directly to your Honorable Board. I have no doubt but that the Board of Directors of the Western Society of Engineers would, if requested by

you, aid in the selection of the proper man for this work.

Prior to December 31st last the estimates used by us were based upon center line elevations. The estimates returned on December 31st by Assistant Engineers, made up from actual cross-sections, varied from the center line estimates by $1\frac{1}{2}$ per cent nearly.

I estimate that the cost of what I ask will be about \$5,000 over and above the salary to be paid the Engineer who takes charge of the work as proposed, and the time consumed between three and four months.

Further, I think it would be desirable that as soon as the original notes have been carefully copied, that the original note books be identified by the Chief Engineer and turned over by him to some officer of the Board authorized by you to receipt for them, and kept carefully and safely for use in case of any future disputes.

Respectfully submitted,

(Signed)

ISHAM RANDOLPH,

Chief Engineer."

PERMISSION TO CROSS WESTERN AVENUE
AND WESTERN AVENUE BOUL-
EVARD.

The Clerk presented a report from the Chief Engineer, requesting the Board to secure permission from the City of Chicago and the West Chicago Park Commissioners for building a narrow temporary cut across Western Avenue and Western Avenue boulevard to advance the work on Section O of the Main Channel; and the report was read.

The President announced that he had communicated with the Board of West Chicago Park Commissioners with reference to a conference on the same matter.

Mr. Eckhart, seconded by Mr. Kelly, moved that the report be ordered printed and referred to the Joint Committee on Engineering and Finance, and the President be instructed to communicate with the authorities of the City of Chicago and arrange for a conference on the matter.

The motion prevailed unanimously, the report was ordered printed and so referred, and the President directed in accordance with the motion.

The following is

THE REPORT:

"CHICAGO, April 16, 1895.

*To the Honorable the Board of Trustees,
Sanitary District of Chicago:*

GENTLEMEN—I wish to call your attention to a situation which should enlist your earnest efforts for its betterment, as the work of construction is being seriously delayed and a hardship imposed upon the contractors for its execution, which ought to be abated if it is in your power to do so. The contractors for Section O have excavated the full prism of the Channel up to the east line of the boulevard, and can go no further in that direction without permission from the West Park Board to cut through the said boulevard, and from the city to cut through Western avenue. If these permissions could be had for a narrow cut, travel could be kept open by the use of a pontoon bridge, and the contractors would then have a chance to operate their dredges for a stretch of about 550 feet.

The usefulness of the auxiliary channel is balked by the narrowness of the Stock Yards and Northern Pacific temporary bridge opening, which will not permit the towing of scows to and fro in the prosecution of our work on the lines laid down when the contract was entered into. Section N can therefore not be reached by dredges at all. These being the facts, these contractors find themselves with a large and costly plant on their hands, which they are unable to operate, and while work elsewhere may not be readily found yet they cannot seek other fields of labor by reason of their contracts with this District.

In addition to the measure of relief which would be affected by getting through the boulevard and Western avenue, these contractors might be allowed to excavate by dry methods a limited portion of Section N, pending the opening up of the water approaches, which would afford them relief and advance the work of the District, besides giving employment to many men within the limits of the city.

Yours respectfully,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

PROPOSAL FOR EXCAVATION OF AUXILIARY CHANNEL SECTION O AT REDUCED PRICE.

The Clerk presented a report from the

Chief Engineer, transmitting a proposal from the Illinois Dredging Company, representing the McMahon & Montgomery Company et al., Contractors for Section O, offering to excavate the Auxiliary Channel on said section at a reduced price, under conditions as set forth in the communication; and the report and accompanying communication were read.

Mr. Boldenweck, seconded by Mr. Alt-peter, moved that the report and enclosure be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the report and enclosure were ordered printed and so referred.

The following is

THE REPORT, WITH ENCLOSURE:

"CHICAGO, April 17, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—I submit herewith a letter received on yesterday from the Illinois Dredging Company proposing to excavate the material from the Auxiliary Channel on Section O, for 17 9-10 cents per cubic yard, if allowed to deposit it upon the property of the District, they surrendering all future claim to it so that the material excavated also become the property of the District.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

(One (1) enclosure.)

(ENCLOSURE.)

"CHICAGO, April 16th, 1895.

*Isham Randolph, Esq., Chief Engineer,
Sanitary District of Chicago, Rialto
Building, City:*

DEAR SIR—As your Board have not been able to give us right of way for work on Section O west of the east line of West Park boulevard, where we were stopped last October, and as we have not yet been able to secure the entire completion of the west fork channel so as to make it available for use of scows in removing the material from the proposed lateral channel, we respectfully ask your Board to allow us the temporary use of the ground lying east of the line of the said lateral channel, as a place of deposit for the material exca-

vated therefrom. We have assurances from responsible brickmakers that this material can all be removed within three years, and we will enter into bonds with your Board that this shall be done.

Or if your Board deem the material of any value; or that they should not pay more for the excavation under these circumstances than the lowest price bid for banking it at the time of letting the contract, we hereby offer to deposit on your grounds aforesaid, such portion as we find necessary before we can get the west fork available for use of our scows, at 17 9-10 cents per cubic yard; the material to be the property of the Board and subject entirely to their disposition.

We ask this privilege in order to facilitate the progress of the work, which otherwise will be still further delayed; and in view of the fact that we have been ready a long time with a large plant to prosecute the work on Section O, we respectfully suggest that our request is not an unreasonable one.

Yours truly,

(Signed) *The Illinois Dredging Co.,*

CHAS. FITZ-SIMONS,
President."

PURCHASE OF "ILLINOIS STEEL COMPANY" LAND.

Mr. Eckhart, Chairman, presented a report from the Joint Committee on Finance and Engineering, with reference to the purchase from the Illinois Steel Company of certain right of way lands in Will County, and authorizing and directing the Clerk to pay for said right of way lands, on the voucher of the Attorney, as provided in the report; and the report was read.

Mr. Eckhart, seconded by Mr. Kelly, moved that the report be adopted, ordered printed and placed on file, the recommendations made therein concurred in, and the Clerk authorized and directed to pay the said Illinois Steel Company, on the voucher of the Attorney, for the said right of way lands, as provided in the report.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, the recommendations made therein concurred in, and the Clerk authorized and directed to pay the said Illinois Steel

Company, on the voucher of the Attorney, for the said right of way lands, as provided in the report.

The following is

THE REPORT:

"CHICAGO, April 17, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The Joint Committee on Finance and Engineering has reached an agreement with the Illinois Steel Company for the purchase from it for the corporate purposes of this District of the land hereinafter described for the sum of eight thousand four hundred (\$8,400.00) dollars.

Your Committee recommend that the Clerk of this District be directed to pay, on the voucher of the Attorney, to said Illinois Steel Company the sum of eight thousand four hundred (\$8,400.00) dollars in full payment for the following described land, to-wit:

All that part of the northwest quarter (N. W. $\frac{1}{4}$) of Section thirty-four (34), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, lying west of the Desplaines River with the riparian rights thereof.

Also all that part of the southwest quarter (S. W. $\frac{1}{4}$) of Section thirty-four (34), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, lying west of the Desplaines River and north of the right of way of the Elgin, Joliet and Eastern Railway Company, with the riparian rights thereof, excepting and reserving therefrom the "new" right of way of the Chicago, Santa Fe and California Railway Company.

Also all that part of the southwest quarter (S. W. $\frac{1}{4}$) of Section thirty-four (34), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, bounded and described as follows:

Beginning at a point on the south line of said Section thirty-four (34), five (5) chains, six and one-half ($6\frac{1}{2}$) links east of the southwest corner of said Section thirty-four (34); said point is also the intersection of said south section line and the east line of the right of way of the Chicago, Santa Fe and California Railway Company; thence east eleven (11) chains and seventy-seven (77) links to the west bank of the Desplaines River; thence north along said river bank eight (8) chains and seven (7) links to the south

line of the right of way of the Joliet, Aurora and Northern Railway; thence northwesterly along said right of way eleven (11) chains and fifty-one (51) links to the east line of the right of way of the Chicago, Santa Fe and California Railway Company; thence southwesterly along said last mentioned right of way seventeen (17) chains and forty-one (41) links to the place of beginning; all of said lands lying and being situated in the County of Will and State of Illinois.

Respectfully submitted,

Signed) B. A. ECKHART,
Chairman.
JOHN J. ALTPETER,
THOMAS KELLY,
WM. BOLDENWECK,
W. H. RUSSELL.

Joint Committee on Finance and Engineering."

PAYMENT FOR "SANGER ET AL" LAND.

Mr. Eckhart, Chairman, on behalf of the Joint Committee on Finance and Engineering, presented an order authorizing and directing the Clerk to pay James Martin, County Treasurer of Will County, Illinois, on the voucher of the Attorney, a certain sum as a deposit for certain right of way lands in Will County, in full of verdict for said lands, in the case of the Sanitary District of Chicago vs. John McWeeny, Henry A. Sanger et al, as provided in the order; and the order was read.

Mr. Eckhart, seconded by Mr. Kelly, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven—(7). Nays—None.

Upon which result the President declared the motion carried, the order adopted, and the Clerk authorized and directed to pay James Martin, County Treasurer of Will County, Illinois, a certain sum as a deposit for certain right of way lands in Will County, in full of verdict for said lands in the case of the Sanitary District of Chicago vs. John McWeeny, Henry A. Sanger et al, as provided in the order.

The following is

THE ORDER:

"Ordered, That the Clerk of this District be and he is hereby authorized and directed to pay, on the voucher of the

Attorney, to James Martin, County Treasurer of Will County, Illinois, the sum of fourteen thousand one hundred and two (\$14,102.00) dollars, said sum to be held on deposit by said County Treasurer for the use and benefit of the owners of or persons interested in certain lands and property hereinafter described in the said Will County, pursuant to the order of judgment of the Circuit Court of Will County, Illinois, entered on the 15th day of April, A. D. 1895, in certain condemnation proceedings then pending in said court, being Case No. 14677, entitled Sanitary District of Chicago vs. John McWeeny, Henry A. Sanger, et al., said sum being the aggregate of the amounts awarded by the verdict of the jury and the aforesaid order of judgment as compensation for the taking of the following described lands, to-wit:

All that part of the northwest quarter (N. W. $\frac{1}{4}$) of Section thirty-four (34) in Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, lying between the center thread of the Desplaines River and a line parallel with the west line of said northwest quarter (N. W. $\frac{1}{4}$) and nine hundred (900) feet east thereof.

Also that part of the southwest quarter (S. W. $\frac{1}{4}$) of Section thirty-four (34) in Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian, bounded and described as follows:

Beginning at a point on the east (E.) and west (W.) center line of said Section eight hundred and eighty-nine and twenty seven one-hundredths (889.27) feet west of the center of said section, and running thence southerly nineteen hundred and ninety-five (1995) feet along the west (W.) right of way line of the Chicago, Santa Fe and California Railway Company, as at present located, to a point on the east (E.) bank of the Desplaines River; thence westerly on a normal line to the center thread of said river; thence northwesterly along the center thread of the Desplaines River to its intersection with the east and west center line of the aforesaid section; thence east (E.) to the point of beginning, excepting therefrom the new right of way of the Chicago, Santa Fe and California Railway Company across said tract; all said lands lying and being situated in the County of Will and State of Illinois."

APPROVAL OF REQUISITIONS NOS.
521 AND 522.

Mr. Cooley, Chairman, presented a report from the Joint Committee on

Engineering and Finance, with reference to and returning Requisitions Nos. 521 and 522, for the Engineering Department, presented and referred to that Committee at the meeting held April 10, 1895, (page 2602 of the Proceedings) and recommending that said requisitions be allowed; and the report was read.

Mr. Cooley, seconded by Mr. Russell, moved that the report be adopted, ordered printed and placed on file, the recommendation made therein concurred in, and the accompanying requisitions allowed.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and placed on file, the recommendation made therein concurred in, and the accompanying requisitions allowed.

The following is

THE REPORT:

“CHICAGO, April 17, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In regard to Requisitions Nos. 521 and 522, for the Engineering Department, presented and referred to the Joint Committee on Engineering and Finance at the meeting held April 10, 1895, (page 2602 of the Proceedings), your Committee beg leave to report that they have considered said requisitions, and return same herewith with the recommendation that they be allowed.

Respectfully submitted,

(Signed) L. E. COOLEY,
Chairman.

B. A. ECKHART,
THOMAS KELLY,
WM. BOLDENWECK,
W. H. RUSSELL,
JOHN J. ALTPETER,

Joint Committee on Engineering and Finance.”

(Accompanied by two (2) requisitions).

SEMI-MONTHLY PAYMENTS BY CONTRACTORS.

Mr. Altpeter, Chairman of the Committee on Labor, presented an order di-

recting the Clerk to again notify the contractors of the wishes of the Board with reference to semi-monthly payment by them of employees working on the Main Channel, as set forth in the resolution passed at the meeting held July 25, 1894, (page 2067 of the Proceedings); and the order was read.

Mr. Altpeter, seconded by Mr. Boldenweck, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the order adopted, and the Clerk directed to notify contractors as provided therein.

The following is

THE ORDER:

“*Ordered*, That the Clerk of the District be and he is hereby directed again to call the attention of the contractors of the District to the expression of the wishes of the Board of Trustees as contained in the resolutions passed by them July 25th, 1894 (page 2067 of the Proceedings), in which the contractors were requested to arrange for the payment of their men at least twice each month, and to urge them upon a compliance therewith.”

PERMISSION TO CUT FROM CANAL INTO MAIN CHANNEL AT BRIDGEPORT TO TRANSFER DREDGES.

The Clerk presented a communication, accompanied by plat, from Lindon W. Bates, applying for permission to make a cutting from the Illinois and Michigan Canal into the Main Channel of the District east of the Santa Fe bridge at Bridgeport, for the purpose of removing dredge plant into the Chicago River; and the communication was read.

Mr. Eckhart, seconded by Mr. Altpeter, moved that the communication be ordered printed, and with accompanying plat, referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the communication was ordered printed, and with accompanying plat, so referred.

The following is

THE COMMUNICATION:

“CHICAGO, April 18th, 1895.

Frank Wenter, Esq., President Sanitary District, Rialto Building, Chicago:

DEAR SIR—The undersigned desires to

move his plant from the Illinois and Michigan Canal into the Chicago River.

The most feasible place is at a point immediately east of the Santa Fe bridge at Bridgeport, as shown.

I propose to construct a dam of Wakefield sheeting securely driven and braced in the slip, as shown on sketch herewith, then to cut through into the Illinois and Michigan Canal, float the dredges into the cut, and fill in behind them; then remove the Wakefield dam, and then the dredge fleet will be in the river. None of the operations of the District will be interfered with. Permission of the Santa Fe is assured, and with the permission of the District to conduct operations proposed, under advice of Mr. Randolph, Chief Engineer, I can readily place my plant in the river.

Kindly give this petition your early action.

Respectfully yours,

(Signed) LINDON W. BATES."

REDUCTION OF RENT OF DISTRICT BUILDINGS ON SECTION A.

The Clerk presented a communication from Heldmaier & Neu, accompanied by bill, asking a reduction of rent for District Buildings on Section A, on account of Canal Commissioners' claim for part rental of same, as set forth in the communication; and the communication was read.

Mr. Cooley, seconded by Mr. Boldenweck, moved that the communication be ordered printed and, with enclosed bill, be referred to the Joint Committee on Finance and Judiciary.

The motion prevailed unanimously, and the communication was ordered printed and so referred.

The following is

THE COMMUNICATION:

"MOUNT FOREST, Ill., April 19, 1895.

The Sanitary District of Chicago, Rialto Building, Chicago, Ill.:

GENTLEMEN—We beg to state, in refer-

ence to the enclosed bill for rent of buildings on Section A, that the Commissioners of the Illinois and Michigan Canal charge us twenty-five dollars rent per annum for the ground on which these buildings stand, and we respectfully wish to say that we consider your charge should be reduced this amount, making the same two hundred and fifteen dollars instead of two hundred and forty dollars per annum. We remain,

Yours respectfully,

(Signed) HELDMAIER & NEU,

Per C. S. P."

(One (1) Enclosure.)

PERMISSION GRANTED TO MAKE CUT FROM CANAL INTO MAIN CHANNEL, AT BRIDGEPORT.

Mr. Cooley, seconded by Mr. Eckhart, moved that the Board reconsider the action just taken on the communication from Lindon W. Bates, applying for permission to make cutting from the Illinois and Michigan Canal to the Main Channel of the District east of the Santa Fe bridge at Bridgeport.

The motion prevailed unanimously, whereupon the President declared said action reconsidered, and the communication before the Board for further action.

Mr. Cooley, seconded by Mr. Kelly, then moved that the communication be ordered printed and placed on file, and the subject matter thereof referred to the Chief Engineer with power to act.

The motion prevailed unanimously, and it was so ordered.

ADJOURNMENT.

On motion of Mr. Boldenweck, seconded by Mr. Kelly, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

APRIL 24 AND 26, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and seventieth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, April 24, 1895, at 2:00 o'clock P. M.

In the absence of the President, the Clerk called the Board to order.

On roll-call Messrs. Altpeter, Cooley and Prendergast—three (3) members, were present. No quorum.

ADJOURNMENT TO SPECIAL TIME.

Mr. Altpeter, seconded by Mr. Prendergast, moved that the Board adjourn to meet Friday, April 26, 1895, at 2 o'clock P. M.

THOS. F. JUDGE,
Clerk.

ADJOURNED MEETING.

The adjourned session of the two hundred and seventieth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Friday, April 26, 1895, at 2 o'clock P. M., pursuant to motion.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Gilmore, Kelly, Russell and Wenter—six (6) members, were present.

MINUTES.

The minutes of the regular meeting held April 17, 1895, and of the adjourned session of the same regular meeting, held April 19, 1895, were approved as printed, on motion of Mr. Boldenweck, seconded by Mr. Altpeter.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

CLAUSE "J"

<i>Construction Account—</i>		Total Retained.	*Amount released on this Voucher.
Griffiths & McDermott, (Sec. 1, April 16, 1895).....	\$12,331 07	\$18,052 32	
McArthur Brothers, (Sec. 2, April 16, '95)	12,573 49		
Gilman & Company, (Sec. 3, April 16, '95)	15,736 00		
McArthur Brothers, (Sec. 4, April 16, '95)	16,134 00	10,143 00	
The Qualey Construction Co., (Sec. 5, April 16, 1895).....	11,246 81	7,614 00	
Mason, Hoge & Company, (Sec. 6, April 16, 1895).....	12,054 88	2,781 00	
Mason, Hoge & Company, (Sec. 7, April 16, 1895).....	15,268 75		
Mason, Hoge, King & Co., (Sec. 8, April 16, 1895).....	13,146 65		
Halvorson, Richards & Co., (Sec. 9, April 16, 1895).....	11,438 87		
E. D. Smith & Co., (Sec. 10, April 16, 1895)	15,610 00		
Mason, Hoge & Company, (Sec. 11, April 16, 1895).....	8,459 93		
Mason, Hoge & Company, (Sec. 12, April 16, 1895).....	18,376 09		
Mason, Hoge & Company, (Sec. 13, April 16, 1895).....	10,137 97		
Smith & Eastman, (Sec. 14, April 16, 1895)	26,188 75		
Wright, Meysenburg, Sinclair & Carry, (Sec. 15, April 16, 1895).....	5,678 75		
Heldmaier & Neu, (Sec. A, April 16, 1895)	482 34	26,983 69	
Heldmaier & Neu, (Sec. B, April 16, 1895)	3,869 78	18,438 03	
Western Dredging & Improvement Co., (Sec. C, April 16, 1895).....	4,955 56		
E. D. Smith & Co., (Sec. D, April 16, 1895)	5,945 13		
Angus & Gindele, (Sec. E, April 16, 1895)	2,173 50	1,458 00	
Gahan & Byrne, (Sec. G, April 16, 1895).	2,180 50	10,976 00	
Gahan & Byrne, (Sec. H, April 16, 1895).	1,812 54	4,480 79	
Christie & Lowe, (Sec. I, April 16, 1895).	5,337 50	1,475 00	
Christie & Lowe, (Sec. K, April 16, 1895)	5,862 50	4,600 00	
The Heidenreich Company, (Sec. L, April 16, 1895).....	4,538 63	6,369 01	
The Heidenreich Company, (Sec. M, April 16, 1895).....	3,377 88	5,053 93	
Atchison, Topeka & Santa Fe, (Sec. 12, extra work, temporary roadway, Romeo Road crossing, April 10, 1895)	23 18		
		\$244,991 05	

ENGINEERING DEPARTMENT.

E. R. Shnable, (traveling).....	\$ 34 15	
Hiram A. Miller, (traveling).....	54 06	\$ 88 21

TREASURY DEPARTMENT.

C. H. Hansen, (steel die).....	\$ 5 00	
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GENERAL ACCOUNT.

The Chicago Deposit Vault Company, (rent of offices February to April, 1895).....	\$ 1,875 00	
Chicago Edison Company, (electric lighting, April, 1895).....	38 20	\$ 1,913 20
Grand total.....		\$243,997 46

*No amounts released on these vouchers.

Mr. Kelly, seconded by Mr. Russell, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck (*except as to Construction vouchers of McArthur Brothers and Gilman & Co., on Sections 2 and 3*), Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending April 20, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, April 26, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending April 20, 1895, as the same have been reported to me:

Engineering Department.....	133
Clerical Department.....	4
Law Department.....	7
Treasury Department.....	1
Police Department.....	47
Telephone operator.....	1
Towpath force.....	1

Total employes..... 194

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk.”

APPROVAL OF EMPLOYMENT OF CEMENT INSPECTORS IN ADVANCE OF AUTHORITY.

The Clerk presented a report from the Chief Engineer, asking the approval of the employment of two (2) persons on cement inspection prior to the time of authority for same, granted at the meeting held April 10, 1895, (page 2604 of the Proceedings), and asking that payment for said employes be authorized; and the report was read.

Mr. Kelly, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed and placed on file, the action of the Chief Engineer as set forth therein approved, and the payment of said employes authorized.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and placed on file, the action of the Chief Engineer as set forth therein approved, and the payment of said employes authorized.

The following is

THE REPORT:

“CHICAGO, April 26, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The authority for the employment of two of the inspectors of masonry expired March 31st, but their services being needed they were continued on the work. It was not until April 10th that new authority for their employment was granted. Request is now respectfully made that your Board approve the action taken and authorize their employment during the first ten days of the current month.

Very respectfully,

(Signed) ISHAM RANDOLPH,
Chief Engineer.”

REQUISITION FOR ADDITIONAL MEN FOR SPECIAL SERVICE—INSPECTION OF MASONRY RETAINING WALLS.

The Clerk presented a report from the Chief Engineer, making requisition for five (5) men for special service (inspection of masonry retaining walls) additional to those provided by the Rules, as set forth in the report; and the report was read.

Mr. Kelly, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed and placed on file, and the requisition made therein allowed.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, and the requisition made therein allowed.

The following is

THE REPORT:

“CHICAGO, April 24, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—Proper conduct of the retaining wall work requires the immediate employment of additional help, for which requisition is now made as follows:

	<i>Per Month:</i>
First—One Sub Instrument man, at.....	\$ 100 00
Second—Two Inspectors of masonry, at..	75 00
Third—One warehouse man to care for cement now arriving for Section 8, at....	75 00
Fourth—One helper to collect sand samples and assist in collecting cement samples at.....	62 40

The contractors are taking up the retaining wall work rapidly now, and I would respectfully urge early action on this requisition.

Respectfully submitted,

(Signed) THOS. T. JOHNSTON,
Acting Chief Engineer.”

PAYMENT OF MAY INTEREST ON BONDS.

Mr. Russell, for the Committee on Finance, presented an order authorizing and directing the Clerk to draw a warrant on the Treasurer, payable to the order of the Treasurer, in the sum of forty-five thousand (\$45,000) dollars, to be used in the payment of May interest on first issue of bonds of the District, as provided in the order; and the order was read.

Mr. Russell, seconded by Mr. Kelly, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the order adopted, and the Clerk authorized and directed as provided therein.

The following is

THE ORDER:

“*Ordered*, That the Clerk of this District be and he is hereby authorized and directed to draw a warrant upon the Treasurer, payable to the order of Melville E. Stone, Treasurer, in the sum of forty-five thousand (\$45,000) dollars, and deliver the same to said Treasurer; said sum to be used by him in the payment of the semi-annual interest on the first issue of bonds of the District due May 1st, 1895.”

SATURDAY CLOSING OF OFFICES.

Mr. Russell presented an order, directing that the offices of the District be closed at noon on all Saturdays from May 1 to October 1, 1895, as provided in the order; and the order was read.

Mr. Russell, seconded by Mr. Gilmore, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the order adopted, and the offices of the District ordered closed on all Saturdays from May 1, to October 1, 1895, as provided in the order.

The following is

THE ORDER:

“*Ordered*, That the officers of the Sanitary District of Chicago be and the same is hereby ordered closed at twelve (12) o'clock noon, on every Saturday from May 1 to October 1, 1895, and that said half-holiday be and the same is hereby extended to all the employes of said Sanitary District; and be it further

Ordered, That the Chief Engineer of said Sanitary District be and he is hereby authorized and empowered to suspend the above order, so far as the same applies to employes in the field, whenever, in the judgment of said Chief Engineer, their services may be required, and in such case the Chief Engineer may substitute the equivalent of said Saturday half-holiday at such other times as the interest of the service may permit.”

CONFERENCE WITH WEST CHICAGO PARK
COMMISSIONERS ON BOULEVARD
CROSSING.

The President announced that he had arranged with the Board of West Chicago Park Commissioners for a conference, at the Board rooms, Monday April 29, 1895, at 3 o'clock, with reference to the Main Channel crossing over the Western Avenue Boulevard. The Joint Committee on Engineering and Finance, to whom the subject matter was referred, desired that all Trustees be present.

ADJOURNMENT.

On motion of Mr. Boldenweck, seconded by Mr. Kelly, the Board then adjourned.

THOS. F. JUDGE,
Clerk.

PROCEEDINGS

—OF THE—

BOARD OF TRUSTEES

—OF THE—

SANITARY DISTRICT OF CHICAGO.

MAY 1, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and seventy-first regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, May 1, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7) members, were present.

MINUTES.

The minutes of the regular meeting held April 24, 1895, and of the adjourned session of the same regular meeting, held April 26, 1895, were approved as printed, on motion of Mr. Boldenweck, seconded by Mr. Kelly.

VOUCHERS.

The Clerk presented the following vouchers :

PAY ROLLS.

Eng. Dept., Chief Engineer's roll, (April, 1895).....	\$1,441 67
Eng. Dept., Division of Construction, (April, 1895).....	5,571 44
Eng. Dept., Division of Drafting and Designing (April, 1895).....	2,905 30
Eng. Dept., Division of Records (April, 1895).....	941 50
Eng. Dept., Special Service roll (April, 1895).....	1,982 16
Eng. Dept., Discharged Men's roll, (April, 1895).....	31 20
	<hr/> \$12,873 27
Clerical Dept., Clerk's roll, (April, 1895)...	\$ 891 67
Law Dept., Attorney's roll, (April, 1895)....	\$1,288 32
Law Dept., Joliet roll, (April, 1895).....	458 33
	<hr/> \$ 1,746 65

Treasury Dept., Treasurer's roll, (April, 1895).....	\$ 168 67
General Account, General roll, (April, 1895).....	\$ 235 00
General Account, Towpath roll, (April, 1895).....	137 00
General Account, Trustees' roll, (April, 1895).....	2,333 34
	<hr/>
	\$ 2,705 34
Police Dept., Marshal's roll, (April, 1895)...	\$ 3,746 65
Total.....	\$22,130 25

ENGINEERING DEPARTMENT.

J. R. Davis & Son, (foundation borings east of Summit)....	\$ 293 70
Soper Lumber Company (pine and oak stakes).....	230 64
Fuller & Fuller Company (white lead and oil).....	11 02
Isham Randolph, (traveling).....	77 50
William Trinkaas, (traveling).....	12 85
Thomas T. Johnston, (traveling).....	10 10
	<hr/>
	\$635 81

CLERICAL DEPARTMENT.

Warner's Towel Supply, (toweling).....	\$ 2 50
--	---------

LAW DEPARTMENT.

Jos. Donnersberger, (right of way expert—services, April, 1895).....	\$ 300 00
J. Underwood & Co., (carbon paper).....	4 00
Callaghan & Co., (law books).....	7 25
Geo. Hingston, (type-writing testimony)...	18 00
Elbert H. Gary, (legal services).....	265 00
D. & F. Murphy (livery)	10 00
A. Hannibal, (repairing furniture).....	3 00
	<hr/>
	\$ 607 25

GENERAL ACCOUNT.

William Martin, (traveling).....	\$ 16 50
Grand total.....	<hr/>
	\$23,392 31

Mr. Kelly, seconded by Mr. Russell, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart,

Kelly, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending April 27, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, May 1, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employees in each department for the week ending April 27, 1895, as the same have been reported to me:

Engineering Department.....	136
Clerical Department.....	4
Law Department.....	7
Treasury Department.....	1
Telephone operator.....	1
Towpath force.....	2
Police Department.....	47

Total employees..... 198

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

REQUISITION FOR ADDITIONAL MAN FOR TEMPORARY SPECIAL SERVICE AS DRAFTSMAN.

The Clerk presented a report from the Chief Engineer, accompanied by voucher, asking the approval of the temporary employment of one extra draftsman, as provided in the report, and of the accompanying special pay-roll for same; and the report was read.

Mr. Boldenweck, seconded by Mr. Altpeter, moved that the report be adopted, ordered printed and placed on file, and the accompanying special pay-roll approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, and the accompanying special payroll approved and ordered paid.

The following is

THE REPORT:

"CHICAGO, May 1, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I present at this meeting a special voucher for the services of H. Wm. Jung as draftsman for 15 days in the month of April. The requirements of the work were such that I had to appoint him in excess to the force allowed. He can now go on the regular payroll owing to a vacancy which has occurred. Will you kindly authorize the payment of the special voucher in his favor?

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

(Accompanied by voucher—\$50.)

MONTHLY REPORT FROM TREASURY DEPARTMENT.

The Clerk presented a report from the Treasury Department for the month of April, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT :

"Balance on hand at date of last report..... \$4,318,342.12

Received from South Town Collector, Sanitary District tax account..... \$ 145,256.29

Received from West Town Collector, Sanitary District tax account..... 65,722.77

Received from North Town Collector, Sanitary District tax account..... 25,000.00

Total..... \$235,979.06

Received from Thos. F. Judge, Clerk, General Account, telephone service, Franklin MacVeagh & Co..... 50.00

Received from Thos. F. Judge, Clerk, General Account, sale of His-

tories, A. C. McClurg & Co..... \$ 24.00

Received from American Trust and Savings Bank, interest for April..... 34.51

Received from Metropolitan National Bank, interest for April..... 1,307.61

Received from Chicago National Bank, interest for April..... 1,343.47

Received from Globe National Bank, interest for April..... 1,723.64

Received from Ft. Dearborn National Bank, interest for April..... 1,341.46

Received from National Bank of Illinois, interest for April..... 1,447.52

\$ 243,351.27

Total cash received for month..... \$4,561,593.39

Total cash disbursed during month as per annexed schedules, viz:

Clerical Department.... \$ 903.92

Treasury Department.. 166.66

Engineering Departm't. 12,758.63

Engineering—Construction Department..... 472,555.70

Law Department..... 3,472.68

Law Department—Land Account..... 23,658.00

General Account..... 3,708.22

Police Department..... 4,002.42

Interest and Premium Account..... 45,000.00

\$566,226.23

Balance this date, in banks as per schedule endorsed hereon \$3,995,367.16

(Signed) MELVILLE E. STONE,
Treasurer.
CHICAGO, May 1st, 1895."

SCHEDULE :

Fort Dearborn National Bank..... \$801,122.08

National Bank of Illinois..... 801,962.61

Chicago National Bank..... 800,638.03

Metropolitan National Bank..... 778,859.95

American Trust and Savings Bank. 21,003.79

Globe National Bank..... 791,780.65

Total.. \$3,995,367.16

ORDER FOR PAYMENT OF RENT OF "PRIVATE ROAD," WEST OF KEDZIE AVE.

Mr. Kelly presented an order, authorizing and directing the Clerk to pay Patrick E. McDonnell and Thomas Cusack, on the voucher of the Attorney, a certain sum, as set forth in the order, in full payment of rent of "Private Road" west

of Kedzie Avenue, to April 30, 1895, under lease of May 1, 1894, presented at the meeting of July 24, 1894 (page 2068 of the proceedings); and the order was read.

Mr. Kelly, seconded by Mr. Boldenweck, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the order adopted and the Clerk directed as provided therein.

The following is

THE ORDER:

“Ordered, That the Clerk of the District be and he is hereby authorized and directed to pay, on the voucher of the Attorney, to Patrick E. McDonnell and Thomas Cusack, the sum of seventy-five (\$75.00) dollars, the amount due under the terms of their lease to this District of “private road” of date of May 1st, 1894.”

CLERK TO WITHHOLD VOUCHERS OF CONTRACTORS WHO VIOLATE SEMI MONTHLY PAYMENT CLAUSE OF CONTRACTS.

Mr. Kelly presented an order, directing the Clerk to withhold the vouchers of contractors on the Main Channel until

the terms of their contracts with reference to the payment of employes semi-monthly are complied with; and the order was read.

Mr. Boldenweck, seconded by Mr. Altpeter, moved that the order be ordered printed and referred to the Committee on Labor, with instructions to report back at the next meeting.

The motion prevailed unanimously, and the order was ordered printed and so referred.

The following is

THE ORDER:

“Ordered, That in all cases where the contracts of the District provide for the payment by contractors of their employes at least twice each month, and where such provision is not observed by the contractor, the Clerk of this District be and he is hereby directed to withhold the vouchers of such contractor until the terms of the contract in this particular are complied with by him.”

ADJOURNMENT.

On motion of Mr. Eckhart, seconded by Mr. Kelly, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS

—OF THE—

BOARD OF TRUSTEES

—OF THE—

SANITARY DISTRICT OF CHICAGO.

MAY 8, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and seventy-second regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, May 8, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Kelly, Russell and Wenter—seven (7) members, were present.

MINUTES.

The minutes of the regular meeting held May 1, 1895, were approved as printed, on motion of Mr. Boldenweck, seconded by Mr. Kelly.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

Total Retained.	CLAUSE "J" Amount re- leased on this Voucher.
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<i>Construction Account—</i>	
Griffiths & McDermott, (Sec. 1, May 1, 1895).....	\$25,260 17
McArthur Brothers, (Sec. 2, May 1, 1895)	19,188 75
Gilman & Company, (Sec. 3, May 1, 1895)	23,600 50
McArthur Brothers, (Sec. 4, May 1, 1895)	22,071 00
The Qualey Construction Co., (Sec. 5, May 1, 1895).....	10,204 25

\$13,087 85	\$4,964 47
9,016 00	1,127 00
7,776 00	

		CLYUSE "J"	
		Total Retained.	Amount re- leased on this Voucher.
Mason, Hoge & Company, (Sec. 6, May 1, 1895).....	15,636 25	\$ 2,673 00	\$ 108 00
Mason, Hoge & Company, (Sec. 7, May 1, 1895).....	11,028 94		
Mason, Hoge, King & Co., (Sec. 8, May 1, 1895).....	18,052 13		
Halvorson, Richards & Co., (Sec. 9, May 1, 1895).....	23,281 48		
E. D. Smith & Co., (Sec. 10, May 1, 1895)	14,630 00		
Mason, Hoge & Company, (Sec. 11, May 1, 1895).....	9,708 13		
Mason, Hoge & Company, (Sec. 12, May 1, 1895).....	16,476 21		
Mason, Hoge & Company, (Sec. 13, May 1, 1895).....	10,267 47		
Smith & Eastman, (Sec. 14, May 1, 1895)	28,871 50		
Wright, Meysenburg, Sinclair & Carry, (Sec. 15, May 1, 1895).....	8,466 50		
Heldmaier & Neu, (Sec. B, May 1, 1895)	11,592 31	16,994 07	1,443 96
Western Dredging & Improvement Co., (Sec. C, May 1, 1895).....	8,451 19		
E. D. Smith & Co., (Sec. D, May 1, 1895)	7,656 96		
Angus & Gindele, (Sec. E, May 1, 1895)	5,504 63	1,809 00	
Gahan & Byrne, (Sec. G, May 1, 1895)...	5,684 00	10,780 00	196 00
Gahan & Byrne, (Sec. H, May 1, 1895)...	1,679 82	4,924 20	
Christie & Lowe, (Sec. I, May 1, 1895)...	7,437 50	1,075 00	400 00
Christie & Lowe, (Sec. K, May 1, 1895)...	7,875 00	4,075 00	525 00
The Heidenreich Company, (Sec. L, May 1, 1895).....	6,208 95	6,792 56	
The Heidenreich Company, (Sec. M, May 1, 1895).....	4,034 84	5,327 35	
McMahon & Montgomery Company, et al., (Sec. O, May 1, 1895).....	1,222 36	1,545 46	
Heldmaier & Neu, (Sec. A, extra work—completing levee, 692-710 and below 710, May 1, 1895).....	1,844 96		
		\$325,935 80	

ENGINEERING DEPARTMENT.

P. F. Pettibone & Co., (stationery).....	\$ 49 50
Keen & DeLang, (stationery).....	4 30
E. Dietzgen Company, (drafting supplies)	5 08
Keuffel & Esser Co., (drafting supplies)	9 50
F. Mayer & Co., (blue printing).....	72 55
Chicago Blue Print Paper Company, (blue print paper)	2 16
S. Wangersheim, (map).....	6 00
A. T. Andreas, (map).....	5 00
W. A. Olmsted, (mounting maps).....	7 75
Rand, McNally & Co., (mounting maps)	2 30
Isham Randolph, (postage stamps).....	24 00
Walmsley, Fuller & Co., (photo supplies)	3 05
Marshall Field & Co., (flagging).....	2 99
Soper Lumber Company, (lumber).....	78 18
Fuller & Fuller Co., (alcohol, etc.).....	6 36

May 8.]

—2632—

[1895.

Hibbard, Spencer, Bartlett & Co., (hardware)	\$ 7 29	
Robt. W. Hunt & Co., (cement scale)...	25 80	
J. M. Abbitt, (coal, etc.).....	19 49	
Geo. Brainard, (gauge reading, April, 1895).....	10 00	
E. Hastings, (gauge reading, April, 1895).....	10 00	
Wm. McGinnis, (gauge reading, April, 1895).....	10 00	
Wm. Kirkham, (gauge reading, April, 1895).....	10 00	
Mary Rusk, (gauge reading, April, 1895)	10 00	
Chicago Towel Supply Co., (towelings) ..	5 40	
C. S. Austin, (ice).....	9 00	
Waukesha Hygeia Mineral Springs Co., (water)	7 50	
Chas. L. Harrison, (traveling).....	42 05	
		\$ 445 75

CLERICAL DEPARTMENT.

C. S. Austin, (ice).....	\$ 3 00
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LAW DEPARTMENT.

Warner's Towel Supply, (towelings).....	\$ 1 50	
C. S. Austin, (ice).....	3 00	
Geo. E. Dawson, (expense)	54 25	
		\$ 58 75

GENERAL ACCOUNT.

John F. Higgins, (printing proceedings and pamphlet histories, April, 1895). \$	361 77	
Thos. F. Judge, (sundry expenses).....	301 90	
C. F. W. Junge, (postage stamps).....	25 00	
		\$ 688 67

POLICE DEPARTMENT.

J. H. Banks, (coal, etc.).....	\$ 6 55
Grand total.....	\$27.138 52

Mr. Kelly, seconded by Mr. Eckhart, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending May 4, 1895.

The same was read, and, by unanimous

consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, May 8, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending May 4, 1895, as the same have been reported to me:

Engineering Department.....	140
Clerical Department.....	4
Law Department.....	7
Treasury Department.....	1
Police Department.....	48
Telephone operator.....	1

Towpath force..... 2

Total employes..... 203

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

REPORT ON CLAIM FOR HYDRAULIC
DREDGE WORK ON SECTIONS 6 AND 7.

Mr. Kelly, Chairman, presented a report from the Joint Committee on Judiciary and Finance, transmitting for filing a communication from Chas. Vivian & Co., making claim for payment for dredge work done on Sections 6 and 7 of the Main Channel, presented and referred to that Committee at the meeting held November 28, 1894, (page 2327 of the Proceedings); and the report was read.

Mr. Kelly, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed, and, with enclosure, placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT:

"CHICAGO, May 8, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—Your Joint Committee on Judiciary and Finance, to whom was referred at the meeting of your Honorable Body held November 28, 1894, (page 2327 of the Proceedings), a communication from Chas. Vivian & Co., making claim for payment for dredge work done on Sections 6 and 7 of the Main Channel, under agreement made by the District, assigned to and assumed by Mason, Hoge & Co., respectfully return said communication for filing, as the Board received notice of the settlement of said claim at the meeting held December 19, 1894, (page 2371 of the Proceedings).

Respectfully submitted,

(Signed) THOMAS KELLY,
Chairman.

JOHN J. ALTPETER,
W. H. RUSSELL,
B. A. ECKHART,
WM. BOLDENWECK.

Joint Committee on Judiciary and Finance."

(One (1) enclosure.)

AMENDMENT TO RULE 3.

Mr. Russell, for the Committee on Rules, presented an amendment to Rule 3 of the Rules of the Board of Trustees, providing for bi-monthly meetings of the Board, as set forth in the amendment.

The amendment was read, and, under the rules, was ordered printed and laid over.

The following is

THE AMENDMENT:

"Amend Rule 3 of the Rules of the Board of Trustees by adding thereto:

'Provided That from May 1 to October 1 the regular meetings of the Board shall be held on the second and fourth Wednesday of each month at the same hour.'"

PROGRESS REPORT ON WITHHOLDING
VOUCHERS OF CONTRACTORS WHO
VIOLATE SEMI-MONTHLY PAY-
MENT CLAUSE OF CONTRACTS.

Mr. Altpeter, Chairman, made a verbal progress report from the Committee on Labor, with reference to the order directing the Clerk to withhold the vouchers of contractors on the Main Channel until the terms of their contracts with reference to the payment of employes semi-monthly are complied with, presented and referred to that Committee at the meeting held May 1, 1895, (page 2629 of the Proceedings), asking additional time for report, which was unanimously granted.

ORDER FOR SUSPENSION OF GAUGE
READING.

Mr. Kelly presented an order, directing the Chief Engineer to suspend the gauge reading at various points on and after July 1, 1895, as provided in the order; and the order was read.

Mr. Kelly, seconded by Mr. Eckhart, moved the adoption of the order.

Mr. Boldenweck, seconded by Mr. Altpeter, moved as a substitute, that the order be ordered printed and referred to the Joint Committee on Engineering and Finance.

On roll-call on the substitute the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Gilmore, Russell and Wenter—five (5). Nays—Messrs. Eckhart and Kelly—two (2).

Upon which result the President declared the substitute carried, and the order ordered printed and referred to the

Joint Committee on Engineering and Finance.

The following is

THE ORDER:

"Ordered, That the Chief Engineer of the Sanitary District be and he is hereby ordered to suspend the gauge reading on and after July 1st, 1895, at the following points:

Bowmanville, on the north branch; Desplaines, Riverside and Joliet, on the Desplaines River and Morris on the Illinois River."

REMOVAL OF DAM AT COLUMBIA PARK.

The Clerk presented a communication from G. W. Plummer, Attorney for the Columbia Park Company, with reference to the removal of the dam in the Desplaines River opposite Columbia Park, as set forth in the communication; and the communication was read.

Mr. Boldenweck, seconded by Mr. Alt-peter, moved that the communication be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the communication was ordered printed and so referred.

The following is

THE COMMUNICATION:

"CHICAGO, May 8, 1895.

Sanitary District of Chicago:

GENTLEMEN—I am instructed by the Columbia Park Company, as its Attorney, to call your attention again to the fact that the dam constructed by you last fall in front of Columbia Park has not been removed as promised by you. This dam, as we understand, was to be only temporary, and its remaining there should not be continued for the reason that it is a menace and danger to the Park in case of high water, and also, when the water is low, will interfere with, prevent and greatly damage the boating facilities

of Columbia Park. It will also enable people visiting the Park to cross and expose themselves to the danger from the blasting carried on in front of the Park. Please give this your immediate attention.

Yours etc.,

(Signed) G. W. PLUMMER,
Attorney."

PROPOSITION TO RENT SPOIL BANK ON ONE SIDE OF MAIN CHANNEL.

The Clerk presented a communication from Geo. A. Chambers, making proposition to rent the spoil bank on one side of the Main Channel, as set forth in the communication; and the communication was read.

Mr. Boldenweck, seconded by Mr. Alt-peter, moved that the communication be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the communication was ordered printed and so referred.

The following is

THE COMMUNICATION:

"CHICAGO, May 4, 1895.

To the Commissioners of the Drainage Canal:"

GENTLEMEN—If you will have the dump on one side of the canal made level and 150 feet wide on top, I will lease it of you for 199 years, and pay you \$30,000 per year rental. Lease to commence as soon as finished.

Yours truly,

(Signed) GEO. A. CHAMBERS,
115 Monroe St."

ADJOURNMENT.

On motion of Mr. Gilmore, seconded by Mr. Russell, the Board then adjourned.

THOS. F. JUDGE,
Clerk.

May 8,]

—2635—

[1895.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

MAY 15, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and seventy-third regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, May 15, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Gilmore, Kelly, Russell and Wenter—six (6) members, were present.

MINUTES.

The minutes of the regular meeting held May 8, 1895, were approved as printed, on motion of Mr. Boldenweck, seconded by Mr. Russell.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

Geo. B. Carpenter & Co., (paint).....	\$ 3 05
John McCaffery, (rent, Brighton Park, April, 1895).....	25 00
Frank S. Amick, agent, (rent, Corwith, April, 1895).....	15 00
J. M. Abbitt, (rent, Willow Springs, April, 1895).....	20 00
H. S. Norton, (rent, Lemont, April, 1895).....	18 00
W. T. Keating, (traveling).....	25 57
	<hr/> \$ 106 62

POLICE DEPARTMENT.

Hibbard, Spencer, Bartlett & Co., (lamp wicks).....	\$ 1 00
John Larney, (feed)...	34 70

Kirk Bros., (horse-shoeing).....	\$ 14 75
Daniel E. Tracy, (horse-shoeing).....	3 80
	<u>\$ 54 25</u>
Grand total.....	<u>\$ 160 87</u>

Mr. Russell, seconded by Mr. Boldenweck, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending May 11, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, May 15, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending May 11, 1895, as the same have been reported to me:

Engineering Department.....	145
Clerical Department.....	4
Law Department.....	7
Treasury Department.....	1
Police Department.....	48
Telephone operator.....	1
Towpath force.....	1
Total employes.....	<u>207</u>

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk.”

MONTHLY REPORT FROM CLERICAL DEPARTMENT.

The Clerk presented a report from the Clerical Department for the month of April, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, May 15. 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have the honor to herewith report that the total amount expended on account of and charged to the Clerical Department during the month of April, 1895, was \$896.17, divided as follows:

Salaries	\$891 67
General expenses.....	4 50
Total.....	<u>\$896 17</u>

There are no outstanding liabilities, and the expenses for the present month will, from present indications, be under \$950.

The total amount expended and charged to the General Account during the month of April, 1895, was \$5,571.57, divided as follows:

Salaries.....	\$2,654 33
Printing.....	61 92
Telephone service.....	764 17
Electric lighting.....	38 20
Rent.....	1,875 00
General expenses.....	177 95
Total.....	<u>\$5,571 57</u>

There are no outstanding liabilities against the General Account, and the expenses for the present month will be about \$4,000.

During the month of April, 1895, there were warrants authorized and drawn against the various accounts for \$591,733.49, as follows:

Engineering Department.....	\$12,540 41
Clerical Department.....	896 17
Law Department.....	3,361 93
Treasury Department.....	171 66
General Account.....	5,571 57
Engineering Department (Construction Account).....	496,591 98
Law Department (Land Account).....	23,658 00
Bond Interest and Premium Account.....	45,000 00

Police Department.....\$ 3,941 77
 Total.....\$591,733 49

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

MONTHLY REPORT FROM LAW DEPARTMENT.

The Clerk presented a report from the Law Department for the month of April, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, Ill., May 7th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I submit herewith the monthly report for April, 1895.

The total amount paid out by this Department during the month is as follows:

SALARIES.

Attorneys..... \$1,322 23
 Office force..... 291 00
 \$1,613 23

GENERAL EXPENSES.

Court costs. \$ 5 00
 Right of way..... 425 00
 Expense account... 68 70
 Legal services..... 1,250 00
 \$1,748 70

LAND ACCOUNT.

Right of way for
 which deeds have
 passed.....\$ 9,556 00
 Right of way (con-
 demnation) 14,102 00
 \$23,658 00

Total.....\$27,019 93

All of the right of way for which settlements were made during the month being located in Will County.

Settlements were reached during the month with the Illinois Steel Company and with the American Stone Company, et al., for the purchase of the several tracts included in the condemnation suits of the Sanitary District against them, and these tracts have been acquired by the District.

In the suit for the tract known as the "Cutting Island," the question of ownership occupied the attention of the Court for nearly a week. That settled, the matter of valuation was taken up before a jury and a verdict secured April 26th.

The preliminary questions in the suit of the District vs. Moll, Lomax, et al., have been settled by the Court and the question of the value of the land has been set for trial before a jury for May 13th. It was found necessary to continue the case as to the westerly tracts outside the Bracken Bank.

The attention of the Department has also been given to the pleadings and the questions of law involved in the cases of Ricker, Lee & Co. vs. the Sanitary District, in the Circuit Court of the United States for the Northern District of Illinois.

The trial of the Moll-Lomax suit, the questions of boulevard and railroad crossings and routine work will occupy the Department during the coming month.

Respectfully submitted,

(Signed) GEO. E. DAWSON,
Attorney."

REPORT ON REMOVAL OF DAM AT COLUMBIA PARK.

Mr. Kelly, for the Joint Committee on Engineering and Finance, presented a report from that Committee, with reference to and accompanied by a communication from G. W. Plummer, Attorney for the Columbia Park Company, concerning the removal of the dam in the Desplaines River opposite Columbia Park, presented and referred to that Committee at the meeting held May 8, 1895, (page 2634 of the Proceedings) recommending that the Chief Engineer be authorized and directed to have said dam removed, as provided in the report; and the report was read.

Mr. Kelly, seconded by Mr. Russell, moved that the report be adopted, ordered printed, and, with enclosure, placed on file, and the recommendation made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Gilmore, Kelly, Russell, and Wenter—five (5). Excused and not voting—Mr. Boldenweck—one (1). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and with en-

closure, placed on file, and the recommendation made in the report concurred in.

The following is

THE REPORT:

"CHICAGO, May 15, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In regard to the communication from G. W. Plummer, Attorney for the Columbia Park Company, with reference to the removal of the dam in the Desplaines River, opposite Columbia Park, presented and referred to the Joint Committee on Engineering and Finance at the meeting held May 8, 1895, (page 2634 of the Proceedings) your Committee respectfully report that they have considered the same, and respectfully return said communication for filing, with the recommendation that the Chief Engineer be authorized and directed to have the said dam removed at a cost not exceeding the sum of three hundred (\$300) dollars.

Respectfully submitted,

(Signed) THOMAS KELLY,
W. H. RUSSELL,
JOHN J. ALTPETER,
B. A. ECKHART,

Joint Committee on Engineering and Finance."

(One (1) enclosure.)

REPORT ON PROPOSITION TO RENT SPOIL BANK ON ONE SIDE OF MAIN CHANNEL.

Mr. Kelly, for the Joint Committee on Engineering and Finance, presented a report from that Committee, with reference to and accompanied by a communication from Geo. A. Chambers, making proposition to rent the spoil bank on one side of the Main Channel, presented and referred to that Committee at the meeting held May 8, 1895, (page 2634 of the Proceedings) recommending that said proposition be not accepted; and the report was read.

Mr. Kelly, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed, and, with enclosure, placed on file, and the recommendation made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President de-

clared the motion carried, the report adopted, ordered printed and, with enclosure, placed on file, and the recommendation made in the report concurred in.

The following is

THE REPORT:

"CHICAGO, May 15, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Joint Committee on Engineering and Finance, to whom was referred at the meeting held May 8, 1895, (page 2634 of the Proceedings) a communication from Geo. A. Chambers, making proposition to rent the spoil bank on one side of the Main Channel, as set forth in the communication, respectfully report that they have considered the same, and return said communication herewith for filing, with the recommendation that the proposition be not accepted.

Respectfully submitted,

(Signed) THOMAS KELLY,
W. H. RUSSELL,
JOHN J. ALTPETER,
WM. BOLDENWECK,
B. A. ECKHART,

Joint Committee on Engineering and Finance."

(One (1) enclosure.)

AMENDMENT TO RULE 3.

The amendment to Rule 3 of the Rules of the Board of Trustees, providing for bi-monthly meetings of the Board, presented by the Committee on Rules, and read, ordered printed and laid over at the meeting held May 8, 1895, (page 2633 of the Proceedings) was again read as provided by the Rules.

Mr. Boldenweck, seconded by Mr. Russell, moved the adoption of the amendment.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, and the amendment adopted.

The following is

RULE 3, AS AMENDED:

"Regular meetings of the Board of

Trustees shall be held on Wednesday of each week, at half-past one o'clock P. M. sharp; *Provided*, that from May 1 to October 1, the regular meetings of the Board shall be held on the second and fourth Wednesday of each month at the same hour."

REPORT ON REQUISITION FOR ADDITIONAL PAMPHLET HISTORIES OF THE DISTRICT.

Mr. Russell, for the Committee on Rules, presented a report from that Committee, with reference to and accompanied by a report from the Chief Engineer, asking permission to print and issue 10,000 additional copies of the Pamphlet History of the District, as set forth in the report, presented and referred to that Committee, with power to act, at the meeting held April 19, 1895, (page 2614 of the Proceedings) stating that said histories have been printed under conditions as set forth in the report; and the report was read.

Mr. Boldenweck, seconded by Mr. Kelly, moved that the report be adopted, ordered printed, and, with enclosure, placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT:

"CHICAGO, May 15, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In regard to the report of the Chief Engineer, asking permission to print and issue 10,000 additional copies of the Pamphlet History of the District, presented to your Honorable Body and referred to the Committee on Rules, with power to act, at the meeting held April 19, 1895, (page 2614 of the Proceedings) your Committee respectfully report that they have had the said histories printed at a cost of \$277.50 and return herewith the report of the Chief Engineer for filing.

Respectfully submitted,

(Signed)

FRANK WENTER,

Chairman.

W. H. RUSSELL,

B. A. ECKHART,

Committee on Rules."

(One (1) enclosure.)

REPORT ON ORDER DIRECTING CLERK TO WITHHOLD VOUCHERS OF CONTRACTORS WHO VIOLATE SEMI-MONTHLY PAYMENT CLAUSE OF CONTRACTS.

Mr. Altpeter, Chairman, presented a report from the Committee on Labor, with reference to and returning the order directing the Clerk to withhold the vouchers of contractors on the Main Channel who violate the terms of their contracts with reference to the semi-monthly payment of employes, presented and referred to that committee at the meeting held May 1, 1895, (page 2629 of the Proceedings) transmitting certain correspondence with contractors and recommending the adoption of the returned order; and the report was read.

Mr. Altpeter, seconded by Mr. Kelly, moved that the report be adopted, ordered printed and, with enclosures, placed on file, the recommendations made in the report concurred in, and the accompanying order adopted.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and, with enclosures, placed on file, the recommendations made in the report concurred in, and the accompanying order adopted.

The following is

THE REPORT:

"CHICAGO, May 15, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Committee on Labor has had under consideration the order directing the Clerk to withhold the vouchers of contractors on the Main Channel until the terms of their contracts with reference to the semi-monthly payment of employes are complied with, presented and referred to the Committee at the meeting held May 1, 1895, (page 2629 of the Proceedings).

In connection with said order, the Committee has taken up the entire question of the payment of employes by the contractors twice a month, and transmits herewith for filing certain correspondence in the premises, being replies received from contractors on receipt of notice from the Clerk of the District, enclosing copy of the order passed by your Honorable Body at the meeting

held April 19, 1895, (page 2619 of the Proceedings).

As shown by said correspondence, the following contractors agree to comply with the wishes of the Board:

The Heidenreich Company, Christie & Lowe, Gahan & Byrne, Griffiths & McDermott, Mason, Hoge & Co., Mason, Hoge, King & Co., and Wright Meysenburg, Sinclair & Carry.

The Committee called before it the other contractors on the Channel, and succeeded in obtaining a promise from each of them, that in case the Board of Trustees insisted on their so doing, they would pay their employes twice each month, as shown by the following abstract of their statements:

McMahon & Montgomery Company stated that they were now and would continue paying their employes twice each month. Hayes Brothers stated that their employes could draw their wages whenever they so desired. Heldmaier & Neu, The Western Dredging and Improvement Company, Angus & Gindele, Weir, McKechney & Co., McArthur Brothers, Gilman & Co., The Qualey Construction Company and Halvorson, Richards & Co., set forth many reasons why, in their opinion, the payment of employes once a month was advantageous in the prosecution of their work, but all of said contractors agreed that in case the Board of Trustees so insisted, and the other contractors agreed to pay semi-monthly they would do likewise.

E. D. Smith & Co. stated that their firm pay their employes whenever they wish their money. Smith and Eastman are the only firm who have not been before the Committee, and it is probable, if all the other contractors agree to comply with the wishes of the Board, that they will also do so.

Your Committee therefore recommends that all contractors on the Main Channel be and they are hereby again notified that it is the earnest desire of the Board of Trustees of this District that they pay their employes at regular intervals and at least twice each month; and that the Clerk be directed to transmit a copy of this report to each of said contractors.

Your Committee also returns herewith the order directing the Clerk to withhold vouchers of contractors under conditions as provided therein, referred to it on May 1, 1895, and recommends that

the same be adopted by the Board. All of which is

Respectfully submitted,

(Signed) JOHN J. ALTPETER,
Chairman.
THOMAS KELLY,
B. A. ECKHART,
Committee on Labor."

(13 enclosures.)

PAYMENT FOR "CUTTING ISLAND" LAND.

Mr. Kelly, for the Joint Committee on Finance and Engineering, presented an order, directing the Clerk to pay James Martin, County Treasurer of Will County, Illinois, on the voucher of the Attorney, a certain sum as a deposit for certain right of way lands in Will County, known as "Cutting Island," in full of verdict for said lands, in the case of the Sanitary District of Chicago vs. Catherine Cutting, Joseph Cutting, et al., as provided in the order; and the order was read.

Mr. Kelly, seconded by Mr. Boldenweck, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried the order adopted and the Clerk authorized and directed to pay James Martin, County Treasurer of Will County, Illinois, a certain sum as a deposit for certain right of way lands in Will County, known as "Cutting Island," in full of verdict for said lands, in the case of the Sanitary District of Chicago vs. Catherine Cutting, Joseph Cutting, et al., as provided in the order.

The following is

THE ORDER:

"*Ordered*, That the Clerk of the District be and he is hereby authorized and directed to pay; on the voucher of the Attorney, to James Martin, County Treasurer of Will County, Illinois, the sum of two thousand six hundred and ninety (\$2,690) dollars, said sum to be held on deposit by said County Treasurer for the use and benefit of the owners of or persons interested in certain lands and property hereinafter described in the said Will County, pursuant to an order of judgment of the Circuit Court of Will County, Illinois, entered on the 6th day of May, A. D. 1895, in certain

condemnation proceedings then pending in said Court, being case number 15345, entitled Sanitary District of Chicago vs. Catherine Cutting, Joseph Cutting, et al.; said sum being the aggregate of the amounts awarded by the verdict of the jury and the aforesaid order of judgment as compensation for the taking of the following described real estate, to-wit:

That part of the northwest quarter (N. W. $\frac{1}{4}$) of Section three (3), Township thirty-five (35) North, Range ten (10) East of the Third Principal Meridian described as, being so much of the tract designated in the petition filed in said cause as Tract 83 as lies between the northwesterly reserve line of the Illinois and Michigan Canal and the center thread of the East Channel of the Desplaines River due east of an island in said river known as Cutting Island.

Also that part of the northwest quarter (N. W. $\frac{1}{4}$) of Section three (3), Township thirty-five (35) North, Range ten (10) East of the Third Principal Meridian, bounded and described as follows:

Beginning at the intersection of the north westerly reserve line of the Illinois and Michigan Canal with the south line of said northwest quarter (N. W. $\frac{1}{4}$); running thence northeast along said reserve line one thousand six hundred and thirty-two (1,632) feet to a point opposite the head of an island; thence west fifteen (15) feet to the center thread of the East Channel of the Desplaines River; thence northerly, northwesterly and westerly along said center thread to its intersection with the center thread of the West Channel of the Desplaines River; thence southerly, southwesterly and south easterly along said center thread to its intersection with a line drawn westerly from the point of contact of the south line of said northwest quarter (N. W. $\frac{1}{4}$) with the easterly margin of

said river and at right angles to the general course of said river there; thence easterly on said line to said easterly margin; thence east along said south line to the place of beginning; except that part thereof lying due east of said island and between the northwesterly reserve line of the Illinois and Michigan Canal and the center thread of the East Channel of the Desplaines River, due east of said island.

Also that part of the southwest quarter (S. W. $\frac{1}{4}$) of Section three (3), Township thirty-five (35) North, Range ten (10) East of the Third Principal Meridian, bounded and described as follows:

Beginning at the intersection of the north line of said southwest quarter (S. W. $\frac{1}{4}$) with the westerly reserve line of the Illinois and Michigan Canal; thence west along said north line of said southwest quarter (S. W. $\frac{1}{4}$) to the easterly margin of the Desplaines River; thence in a westerly direction on a line perpendicular to the center thread of the Desplaines River to a point opposite the intersection of the east margin of said Desplaines River with said center thread; thence southerly along said center thread of the Desplaines River to a point opposite the intersection of the east margin of the said Desplaines River with the westerly reserve line of the Illinois and Michigan Canal; thence easterly to said intersection on a line perpendicular to said center thread; thence northeasterly along the westerly reserve line of the Illinois and Michigan Canal to the point of beginning. All said lands lying and being situated in the County of Will and State of Illinois."

ADJOURNMENT.

On motion of Mr. Kelly, seconded by Mr. Russell, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

May 15,]

—2643—

[1895.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

MAY 22 AND 24, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and seventy-fourth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, May 22, 1895, at 2:00 o'clock P. M.

In the absence of the President, the Clerk called the Board to order.

On roll call Mr. Altpeter—one (1) member, was present. No quorum.

ADJOURNMENT TO SPECIAL TIME.

On motion of Mr. Altpeter, the Board stood adjourned to meet Friday, May 24, 1895, at 2 o'clock P. M.

THOS. F. JUDGE,
Clerk.

ADJOURNED MEETING.

The first adjourned session of the two hundred and seventy-fourth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Friday, May 24, 1895, at 2 o'clock P. M., pursuant to motion.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wenter—six (6) members, were present.

MINUTES.

The minutes of the regular meeting held May 15, 1895, were approved as printed, on motion of Mr. Kelly, seconded by Mr. Boldenweck.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

<i>Construction Account—</i>		CLAUSE "J"	
		Total Retained.	Amount released on this Voucher.
Griffiths & McDermott, (Sec. 1, May 16, 1895).....	\$ 12,394 23	\$13,641 72	
McArthur Brothers, (Sec. 2, May 16, 1895).....	12,722 50		
Gilman & Company, (Sec. 3, May 16, 1895).....	19,255 25		
McArthur Brothers, (Sec. 4, May 16, 1895).....	19,125 75	7,595 00	\$ 1,421 00
The Qualey Construction Co., (Sec. 5, May 16, 1895).....	13,438 25	7,776 00	
Mason, Hoge & Company, (Sec. 6, May 16, 1895).....	15,500 62	2,511 00	162 00
Mason, Hoge & Company, (Sec. 7, May 16, 1895).....	19,750 94		
Mason, Hoge, King & Co., (Sec. 8, May 16, 1895).....	15,108 84		
Halvorson, Richards & Co., (Sec. 9, May 16, 1895).....	14,399 52		
E. D. Smith & Co., (Sec. 10, May 16, 1895).....	16,380 00		
Mason, Hoge & Company, (Sec. 11, May 16, 1895).....	11,580 40		
Mason, Hoge & Company, (Sec. 12, May 16, 1895).....	16,018 40		
Mason, Hoge & Company, (Sec. 13, May 16, 1895).....	10,770 59		
Smith & Eastman, (Sec. 14, May 16, 1895).....	24,272 50		
Wright, Meysenburg, Sinclair & Carry, (Sec. 15, May 16, 1895).....	7,743 75		
Heldmaier & Neu, (Sec. B, May 16, 1895).....	10,050 08	16,362 27	631 8
Western Dredging & Improvement Co., (Sec. C, May 16, 1895).....	6,127 62		
E. D. Smith & Co., (Sec. D, May 16, 1895).....	7,518 16		
Angus & Gindele, (Sec. E, May 16, 1895).....	4,524 18	2,200 50	
Weir, McKechney & Co., (Sec. F, May 16, 1894).....	2,426 37		
Gahan & Byrne, (Sec. G, May 16, 1895).....	6,492 50	10,780 00	
Gahan & Byrne, (Sec. H, May 16, 1895).....	1,644 30	4,924 20	
Christie & Lowe, (Sec. I, May 16, 1895).....	6,081 25	1,075 00	
Christie & Lowe, (Sec. K, May 16, 1895).....	6,300 00	4,075 00	
The Heidenreich Company, (Sec. L, May 16, 1895).....	5,771 11	6,792 56	
The Heidenreich Company, (Sec. M, May 16, 1895).....	7,509 56	5,327 35	
McMahon & Montgomery Company, et al., (Sec. O, May 16, 1895).....	1,102 89	1,545 46	
Mason, Hoge & Co., (Sec. 7, extra work—dimension stone, rip rap work, earth core and embankment, May 16, 1895).....	600 00		
		\$294,609 56	

ENGINEERING DEPARTMENT.

Jacobs, Coles & Co., (stationery).....	\$ 6 00
P. F. Pettibone & Co., (stationery).....	7 41
Eugene Dietzgen Company, (drafting material).....	21 64
Eugene Dietzgen Company, (drafting material).....	8 00
Post & Jacobi Company, (drafting material).....	18 00

CLYUSE "J"
Total Amount re-
Retained. leased on
this Voucher.

Seelig & Kandler, (repairing level).....	3 25	
Walmsley, Fuller & Co., (photo supplies)	4 00	
O. W. Moon, (rent—Lockport, April, 1895).....	20 00	
		\$ 88 30

LAW DEPARTMENT.

Geo. E. Dawson, (expense).....	\$ 63 80	
Geo. E. Dawson, (expense—expert witnesses).....	285 00	
		\$ 348 80

POLICE DEPARTMENT.

Edward Williams, (expense).....	\$ 203 51	
Grand total.....		<u>\$295 250 17</u>

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

REQUISITIONS.

The Clerk presented the following requisition:

No. 801, Law Department, (stationery)..... \$ 31 50

Mr. Eckhart, seconded by Mr. Boldenweck, moved that Requisition No. 801, for the Law Department, as read and shown above, be allowed.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, and Requisition No. 801, for the Law Department, as read and shown above, allowed.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the week ending May 18, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, May 22, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the week ending May 18, 1895, as the same have been reported to me:

Engineering Department.....	148
Clerical Department.....	4
Law Department.....	7
Treasury Department.....	1
Police Department.....	48
Telephone operator.....	1
Towpath force.....	1

Total employes..... 210

Respectfully submitted,

(Signed) THOS. F. JUDGE,

Clerk."

MONTHLY REPORT FROM ENGINEERING DEPARTMENT.

The Clerk presented a report from the Engineering Department for the month of April, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, May 15, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I herewith transmit the

reports of the Divisions of Construction and Drafting and Designing, showing the detailed operations of the Engineering Department for the month of April, 1895; also a classified statement of expenses to May 1st, 1895.

The expenses for the month of April were as follows:

Salaries.....	\$ 12,923 27
Supplies, etc.....	1,279 36
Regular contractors' estimates.....	569,058 71
Extra contractors' estimates.....	1,868 14
	<hr/>
	\$585,129 48

I estimate the expenses of this department for the month of May will be \$725,000.00.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

"CHICAGO, May 22, 1895.

Mr. Isham Randolph, Chief Engineer:

DEAR SIR—I herewith submit statements showing the amount of work done during the month of April and the condition of same on the 1st inst.

Demands upon my time in another Department have been such that I have not had time to prepare the detailed information which usually accompanies these reports.

The month of April, however, shows a marked increase on most of the delinquent sections, the value of the work done being \$641,655.78—a figure that has been exceeded but once since its commencement.

Respectfully submitted,

(Signed) U. W. WESTON,
Supt. of Construction."

STATEMENT SHOWING AMOUNT OF WORK DONE DURING THE MONTH
OF APRIL, 1895—(MAIN CHANNEL).

SECTIONS.	Amount Done During April.	Average Monthly Requirement.	Deficiency for April.	Excess Over Monthly Requirement.	Per Cent. of Monthly Requirement.
O.....		\$13,271 42	\$13,271 42		0.0
N.....		10,674 33	10,674 33		0.0
M.....	\$ 8,745 10	6,274 34		\$ 2,470 76	139.
L.....	12,706 50	8,682 82		4,023 68	146.
K.....	15,175 00	11,559 57		3,615 43	131.
I.....	14,200 00	11,398 49		2,801 51	125.
H.....	4,434 68	12,493 57	8,058 89		35.
G.....	8,792 00	15,277 64	6,485 64		58.
F.....		13,493 77	13,493 77		0.0
E.....	9,666 00	23,230 53	13,564 53		42.
D.....	15,544 25	19,215 65	3,671 40		81.
C.....	15,322 00	13,443 10		1,878 90	114.
B.....	16,718 40	12,901 32		3,817 08	130.
A.....	612 50	24,012 30	23,399 80		3.
1.....	35 082 80	44,801 03	9,718 23		78.
2.....	36 380 00	20,950 88		15,429 12	174.
3.....	44,956 00	29,177 70		15,778 30	154.
4.....	42,593 00	22,982 67		19,610 33	185.
5.....	24,677 50	18,387 51		6,289 99	134.
6.....	31,539 00	26,827 41		4,711 59	118.
7.....	30 054 50	25,622 15		4,432 35	117.
8.....	35,655 75	21,799 22		13,856 53	164.
9.....	39,680 40	19,325 00		20,355 40	205.
10.....	34 560 00	22,458 34		12,101 66	154.
11.....	20 763 50	19,455 05		1,308 45	107.
12.....	39,831 20	20,413 93		19,417 27	195.
13.....	23,320 50	21,140 02		2,180 48	110.
14.....	62 923 00	22,648 61		40,277 39	278.
15.....	16,166 00	23,607 65	7,441 65		68.
Totals.....	\$640,102 58	\$555,526 02	\$ 109,779 66	\$194,356 22	115.22

TABLE OF AMOUNT OF WORK DONE (INCLUDING RIVER DIVER

SECTIONS.	CONTRACTORS.	MAIN CHANNEL.		RIVER DIVERSION.		RUBBLE MASONRY.
		<i>Glacial Drift.</i>	<i>Solid Rock.</i>	<i>Glacial Drift.</i>	<i>Solid Rock.</i>	
		Cubic Yds.	Cubic Yds.	Cubic Yds.	Cubic Yds.	
O	McMahon & Montgomery Co. et al.	534,221				
N	Hayes Bros. et al.	71,300				
M	The Heidenreich Co.	445,800				
L	The Heidenreich Co.	641,200				
K	Christie & Lowe	536,700				
I	Christie & Lowe	810,200				
H	Gahan & Byrne	169,800				
G	Gahan & Byrne	585,300				
F	Weir, McKechney & Co.	504,293		158,234		
E	Angus & Gindele	581,863		95,718		
D	E. D. Smith & Co.	1,263,700				
C	Western Dredging & Imp't. Co.	893,863		162,538		
B	Heldmaier & Neu	726,609		212,486		
A	Heldmaier & Neu	881,103		128,288		
1	Griffiths & McDermott	578,966	4,600	5,876		
2	McArthur Bros.	609,800	126,300	29,516		
3	Gilman & Co.	373,310	353,200			
4	McArthur Bros.	793,400	65,800			
5	The Qualey Construction Co.	620,000	75,700			1,600
6	Mason, Hoge & Co.	560,600	163,500	112,700		1,900
7	Mason, Hoge & Co.	172,400	476,300	97,000	41,800	
8	Mason, Hoge, King & Co.	41,600	789,300	56,600	96,900	
9	Halvorson, Richards & Co.	71,700	763,300	37,700	16,000	
10	E. D. Smith & Co.	29,200	989,000	27,400	56,500	
11	Mason, Hoge & Co.	44,032	716,600	5,756	11,483	
12	Mason, Hoge & Co.	30,061	781,200	11,739		679.44
13	Mason, Hoge & Co.	32,822	954,800			384
14	Smith & Eastman	343,700	522,700			
15	Wright, Mey senburg, Sinclair & Carry	29,500	62,800			
Totals.....		12,977,043	6,845,100	1,141,550	222,683	4,563.44

Main Channel, glacial drift.....
 Main Channel, solid rock.....
 River Diversion, glacial drift.....
 River Diversion, solid rock.....
 Rubble Masonry.....

Total amount required to be done May 1st, 1895.....
 Total amount done May 1st, 1895.....

Total amount short as per contracts.....

Total value of work done under contracts May 1st, 1895.....
 Reserved..... { 12½ per cent.....
 { 10 per cent.....

Total value of vouchers paid, including those of May 1st, 1895.....
 Total value of vouchers paid for collateral work, including those of

Total disbursement, Construction Account.....

NOTE.—*Overhaul to Levee—Section 1 not included. †Overhaul to

May 24.]

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[1895.

SION) AND CONDITION OF WORK ON CONTRACTS, MAY 1ST, 1895.

Total value of work done to May 1st, 1895, on each section.	Total value of work required to be done to May 1st, 1895.	Amounts behind as per contracts.	Amounts ahead as per contracts.	Average monthly progress called for in contracts.	Average monthly progress necessary Jan. 1st, 1895, to time of completion.	Progress made during month of April, 1895.
\$ 112,017 01	\$ 172,392 00	\$ 60,374 99	.....	\$14,366 00	\$14,644 94	\$ 1,552 20
16,399 00	128,091 96	111,692 96	.....	10,674 33	14,986 56	.....
96,738 60	81,566 42	.....	\$ 15,172 18	6,274 34	5,140 87	8,745 10
126,316 40	112,876 66	.....	18,439 74	8,682 82	7,926 55	12,706 50
134,175 00	150,274 41	16,099 41	.....	11,559 57	11,583 70	15,175 00
202,550 00	148,180 37	.....	54,369 63	11,398 49	7,178 89	14,200 00
49,242 00	162,416 41	113,174 41	.....	12,493 57	16,957 53	4,484 68
163,884 00	198,609 32	34,725 32	.....	15,277 64	14,632 96	8,792 00
157,350 16	184,337 70	26,987 54	.....	13,493 77	13,493 77	.....
185,771 28	317,955 99	132,184 71	.....	23,230 53	26,990 69	9,666 00
334,090 69	422,744 30	88,653 61	.....	19,215 65	22,571 94	15,545 25
248,254 00	323,805 62	75,051 62	.....	14,695 71	17,360 69	15,222 00
253,555 65	322,026 76	68,471 11	.....	14,637 58	17,638 83	16,718 40
309,125 99	554,462 70	245,336 71	.....	25,202 85	35,435 74	612 50
*234,762 16	527,625 99	292,863 83	.....	44,801 03	55,635 03	35,082 80
407,675 98	571,116 42	163,440 44	.....	21,152 46	30,636 53	36,380 00
456,225 70	515,814 60	59,588 90	.....	29,177 70	33,936 03	44,956 00
430,736 00	643,514 76	212,778 76	.....	22,982 67	36,357 44	42,593 00
243,067 50	505,656 53	262,589 03	.....	18,387 51	32,729 52	24,677 50
306,933 50	406,355 56	99,422 06	.....	26,896 13	32,371 16	31,539 00
450,847 50	475,352 54	24,505 04	.....	25,699 42	26,087 97	30,054 50
687,966 50	695,391 87	7,425 37	.....	23,979 03	26,264 41	35,655 75
627,725 70	577,106 67	.....	50,619 03	19,900 23	21,128 85	39,680 40
850,550 00	689,627 25	.....	160,922 75	23,780 25	14,817 52	34,560 00
592,066 65	571,864 63	.....	20,202 02	19,719 47	17,553 87	20,763 50
634,091 45	594,515 66	.....	39,575 79	20,500 54	20,959 47	39,831 20
723,590 72	613,060 58	.....	110,530 14	21,140 02	12,819 77	23,320 50
484,247 00	656,809 69	172,562 69	.....	22,648 61	38,123 95	62,926 00
42,657 00	165,253 55	122,596 55	.....	23,607 65	27,107 35	16,166 00
\$9,562,613 14	\$11,488,306 92	\$2,390,525 06	\$464,831 28	\$565,575 57	\$653,022 53	\$641,655 78

Cubic Yards.

.....	†12 977.043
.....	6,845,100
.....	1,141,550
.....	222,683
.....	4,563.44
.....	\$11,488,306 92
.....	9,562,613 14
.....	\$1,925,693 78
.....	\$9,562,613 14
.....	\$1,177,094 42
.....	117,109 97
.....	1,294,204 39
.....	\$8,268,408 75
May 1, 1895.....	†633 288 15
.....	\$8,901,696 90

Levee—Section 1 included. †Including 15,400 yards Collateral Channel.

“CHICAGO, May 9, 1895.

Mr. Isham Randolph, Chief Engineer:

The work of the Division of Drafting and Designing for the month of April was as follows:

The preparation of plans for regulating works, tail race and channel through Joliet was continued. Considerable time was given to the organization of the necessary force for the inspection of retaining walls.

The work of the survey party included the reduction and platting of the notes of the survey of the south fork of the south branch. Some time was given to right of way matters at Joliet.

The river survey below Joliet was again taken up and the left bank and river channel is now finished to Smith's Bridge, the right bank being finished to a point about 4000 feet below Smith's Bridge. The work of platting and reducing is now in progress.

The work on plats and profiles of the Illinois and Michigan Canal of the Illinois River was continued.

The testing of cement for use in retaining walls was continued, as was also the work of preparing record photographs and the maintenance of water gauges.

The principal part of the drafting force was engaged during the entire month in the preparation of the plat books. It is expected to finish this work during the next month.

Some work was done on the lower Illinois River Map. On account of the miscellaneous work but little was done on the watershed map.

Two maps of the right of way between Chicago and Joliet, two cross-sections of canals, three progress profiles of the channel, a profile of the Chicago Divide and Illinois River, a profile of the Upper Illinois River, and three maps of Chicago and vicinity showing the topography, were finished.

Prepared a map and profile of a proposed location of the boulevard over the Main Channel and plats of the right of way in Section 34, Township 36 North, Range 10 East, and the island fraction of Section 3, Township 35 North, Range 10 East.

Tracings were made of the progress profile in contract Sections 2, 3, and 4, plats of the right of way in Sections 27 and 28, Township 36 North, Range 10 East, and Section 30, Township 39 North, Range 14 East, a diagram of the triangulation and a profile of the Illinois River.

Acreages were estimated for the right of way on Sag Island on Section 22, Township 36 North, Range 10 East, and Section 3, Township 35 North, Range 10 East.

Expenses for May will be about the same as for April.

Respectfully,

(Signed)

THOS. T. JOHNSTON,
Assistant Chief Engineer.”

SANITARY DISTRICT OF CHICAGO — ENGINEERING DEPARTMENT.

CLASSIFIED STATEMENT OF EXPENDITURES DURING THE MONTH OF APRIL, 1895.

CLASSIFICATION.	Eng. Expenses.		Construction.		Total for Month.		Previously Reported.		Total to Date.	
	Salaries.	Supplies, Etc.	Regular.	Extra.	Eng. Expenses.	Construction.	Eng. Expenses.	Construction.	Eng. Expenses.	Construction.
Preliminary Sundries.....							\$120,633 75		\$120,633 75	
Locating Route.....							32,222 94		32,222 94	
Borings and Test Pits.....		\$ 233 70			\$ 233 70		16,205 50		16,205 50	
Maps, Plans and Specifications.....	\$ 946 00	6 27			952 27		32,201 01		33,243 28	
Chicago River Survey.....							17,082 66		17,082 66	
Survey of street lines adjacent to Chi. River.							18,327 31		18,327 31	
Right of Way.....	359 00	39 56			398 56		7,476 32		7,476 32	
Flood Measurements.....	653 00	72 35			725 35		13,236 31		13,236 31	
Disposal of Floods at Joliet.....	1,075 80	21 27			1,047 07		15,203 02		15,203 02	
Regular Construction.....	8,568 97	725 90	\$569,058 71		9,294 87	\$569,058 71	240,368 99	\$7,717,345 70	249,663 86	\$8,286,404 41
Extra Work—Main Channel.....							13,455 51		13,455 51	
Extra Work—River Diversion.....							9,723 42		9,723 42	
Diversion North Branch Chicago River.....							3,643 51		3,643 51	
Levees, Trestles and Embankments.....						1,808 14	170,097 86		171,966 00	
Spillway.....							1,754 91		1,754 91	
Tow Path.....							5,246 04		5,246 04	
Building Western Stone Company's Bridge.....							1,157 05		1,157 05	
Building Stephens Street Bridge.....							19,029 05		19,029 05	
Building Alchison, Topeka & Santa Fe Bridge.....							22,329 89		22,329 89	
Building Mt. Forest Foot Bridge.....							18,738 80		18,738 80	
Repairing and Moving Bridges.....							32 17		32 17	
Office Building at Sag.....							1,050 13		1,050 13	
Saving of Building Sand.....							2,339 43		2,339 43	
Mortar, Sand and Cement Tests.....	505 50	70 15			575 65		781 63		781 63	
Saving of Duane-ston Stone.....							1,688 23		1,688 23	
Frostion Test.....							1,490 75		1,490 75	
Temporary Sanitary Relief.....							237 00		237 00	
Photographs of Works.....	125 00	27 20			152 20		1,852 53		2,004 73	
Public Reports.....							1,138 14		1,138 14	
General Account.....	740 00	22 96			762 96		65,942 47		66,705 43	
Totals.....	\$12,023 27	\$1,279 36	\$569,058 71	\$1,808 14	\$14,202 63	\$570,926 85	\$618,175 55	\$8,330,728 45	\$632,378 18	\$8,901,655 30

ADJOURNMENT TO SPECIAL TIME.

Mr. Kelly, seconded by Mr. Boldenweck, moved that when the Board adjourn it do adjourn to meet Wednesday, June 5, 1895, at 2 o'clock P. M.

The motion prevailed unanimously, and it was so ordered.

OFFICES TO BE CLOSED ON "DECORATION DAY."

Mr. Russell presented an order, directing that the offices of the District be ordered closed on Thursday, May 30, 1895, the same being "Decoration Day," a legal holiday; and the order was read.

Mr. Russell, seconded by Mr. Altpeter, moved the adoption of the order.

The motion prevailed unanimously, and the President declared the order adopted and the offices of the District ordered closed, as provided therein.

The following is

THE ORDER:

"*Ordered*, That the offices of the Sanitary District of Chicago be and the same are hereby ordered closed on Thursday, May 30, 1895, the same being 'Decoration Day'—a legal holiday."

REQUEST FOR INFORMATION ON EFFECT OF MAIN CHANNEL ON LAKE LEVELS.

The Clerk presented a communication, addressed to President Wenter, from Col. O. M. Poe, Corps of Engineers, U. S. A., requesting certain information with reference to the effect of the Main Channel on the levels of the Lakes, as set forth in the communication; and the communication was read.

Mr. Boldenweck, seconded by Mr. Eckhart, moved that the communication be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the communication was ordered printed and so referred.

The following is

THE COMMUNICATION:

"UNITED STATES ENGINEER OFFICE, }
CHICAGO, Ill., May 22, 1895. }

Hon. Frank Wenter, President Board of Trustees, Sanitary District of Chicago, Chicago, Ill.:

SIR—The Board of Engineers appointed by direction of the Secretary of War to consider and report upon "the probable

effect of the operation of the Chicago Drainage Canal upon the lake and harbor levels and upon the navigation of the Great Lakes and their connecting waterways" would be pleased to receive from your Honorable Board of Trustees any information or data bearing upon the subject submitted to us, and especially the following:

First—The conclusions arrived at from investigations made by your authority or by others as to the effects upon the levels of the great lakes by the operation of your Canal, including any mathematical analyses and discussions of the question from which these conclusions have been arrived at.

Any references to printed discussions by titles, etc., will be very much appreciated if copies can not be furnished.

Second—Description of the Canal, including dimensions of wetted perimeter, slopes, and character of material through which excavated.

Third—Whether any part of the inner harbor of Chicago, which includes Chicago River and its branches, will be utilized as part of the proposed Canal, and if so what amount of water you propose to take through these river channels.

Fourth—If Chicago River be utilized, what changes you propose to make in the navigable channels of the river, in dimensions, slopes and structures to adapt them to your purposes; and what additional channels of supply other than the main branch of the Chicago River; which is now the only evident connection between Lake Michigan and the proposed canal, your Board proposes to make.

In making these inquiries, the Board of Engineers consider that your Honorable Body is much interested in the solution of the questions submitted to us, and therefore desirous to aid as far as practicable in arriving at correct conclusions.

Any communications you may desire to make should be addressed to me at Detroit, Michigan.

Very respectfully,

Your obedient servant,

(Signed) O. M. POE,
Colonel, Corps of Engineers."

BILL FOR WORK ON DAM NO. 1 AT JOLIET.

The Clerk presented a communication, addressed to President Wenter, from

Alt. Gerdes, President of the Board of Canal Commissioners of the Illinois and Michigan Canal, enclosing bill (\$1,000) for repair work done on Dam No. 1 at Joliet, as set forth in the communication; and the communication was read.

Mr. Boldenweck, seconded by Mr. Russell, moved that the communication be ordered printed, and, with accompanying bill, referred to the Committee on Finance.

The motion prevailed unanimously, and the communication was ordered printed, and, with accompanying bill, so referred.

The following is

THE COMMUNICATION:

"LOCKPORT, Ills., May 22, 1895.

Mr. Frank Wenter, President Sanitary District of Chicago, Chicago, Ills.:

DEAR SIR—Herewith find bill of Canal Commissioners against the Sanitary District, for work done and material furnished in strengthening Dam No. 1 at Joliet, amounting to one thousand (\$1,000) dollars.

The total expense incurred by the Canal Commissioners on this work is much greater than this amount; however, we agreed at our conference with your Joint Committee on Finance and Engineering on November 13th, last, to accept of \$1,000.00 as your share of the cost.

Trusting you will give this matter prompt attention, I remain,

Yours truly,

(Signed)

ALT. GERDES,

President."

(One (1) enclosure.)

ADJOURNMENT.

On motion of Mr. Boldenweck, seconded by Mr. Eckhart, the Board then adjourned, to meet Wednesday, June 5, 1895, at 2 o'clock P. M., pursuant to motion.

THOS. F. JUDGE,

Clerk.

May 24,]

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[1895.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

JUNE 5, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

ADJOURNED MEETING.

The second adjourned session of the two hundred and seventy-fourth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, June 5, 1895, at 2 o'clock P. M., pursuant to motion.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Kelly, Russell and Wenter—seven (7), and subsequently Mr. Prendergast, making a total of eight (8) members, were present.

VOUCHERS.

The Clerk presented the following vouchers :

PAY ROLLS.

Eng. Dept., Chief Engineer's roll, (May, 1895).....	\$1,441 67
Eng. Dept., Division of Construction, (May, 1895).....	5,627 60
Eng. Dept., Division of Drafting and Designing (May, 1895).....	2,875 30
Eng. Dept., Division of Records (May, 1895).....	982 50
Eng. Dept., Special Service roll (May, 1895).....	3,283 23
	<hr/>
	\$14,210 30
Clerical Dept., Clerk's roll, (May, 1895)....	\$ 891 67
Law Dept., Attorney's roll, (May, 1895).....	\$1,288 32
Law Dept., Joliet roll, (May, 1895).....	458 33
	<hr/>
	\$ 1,746 65

Treasury Dept., Treasurer's roll, (May, '95)	\$ 166 66
General Account, General roll, (May, '95)	\$ 235 00
General Account, Tow-path roll, (May, '95)	241 50
General Account, Trustees' roll, (May, '95)	2,333 33
	<hr/>
Police Dept., Marshal's roll, (May, 1895).....	\$ 3 846 70
Total.....	<hr/>
	\$23,671 81

LAW DEPARTMENT.

Jos. Donnersberger, (expert—right of way services, May, 1895).	\$ 300 00
Grand total.....	<hr/>
	\$23 971 81

Mr. Boldenweck, seconded by Mr. Kelly, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Kelly, Russell and Wenter—(7). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

REQUISITION FOR ADDITIONAL MEN FOR SPECIAL SERVICE, AND APPROVAL OF SPECIAL PAY ROLL.

The Clerk presented a report from the Chief Engineer, accompanied by special pay-roll, making requisition for authority to employ nine (9) men for special service, additional to those provided by the Rules, as set forth in the report, and asking the approval of the employment of said men in advance of authority, and of the accompanying special pay-roll; and the report was read.

Mr. Boldenweck, seconded by Mr. Russell, moved that the report be ordered printed and placed on file, the requisition made therein allowed, the action of the Chief Engineer, as set forth therein, approved, and the accompanying special pay-roll approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed and placed on file, the requisition made therein allowed, the action of the Chief Engineer, as set forth

therein, approved, and the accompanying special pay-roll approved and ordered paid.

The following is

THE REPORT:

“CHICAGO, June 4, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—With the consent of the individual members of your Honorable Body and after consultation with the President I have met the necessities of this work by appointing seven Inspectors, one Warehouseman, and one Cement Tester in excess of those authorized by you heretofore. These men appear upon a separate roll and I ask you to confirm my action so that they may be paid along with the rest of the men. They are all \$75 men.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer.”

(Accompanied by pay-roll—Engineering Department. Special Service Roll No. 2, (May, 1895) \$570.00).

APPROVAL OF EMPLOYMENT OF SPECIAL MEN IN ADVANCE OF AUTHORITY, AND REQUISITION FOR FURTHER AUTHORITY.

The Clerk presented a report from the Chief Engineer, asking the approval of his action in continuing in the service four (4) special men, as set forth in the report, authority for the employment of whom had expired, and requesting authority for their continuing until not needed; and the report was read.

Mr. Kelly, seconded by Mr. Boldenweck, moved that the report be ordered printed and placed on file, the action of the Chief Engineer, as set forth therein, approved, and the request for authority for continuing said employes until not needed, granted.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed and placed on file, the action of the Chief Engineer, as set forth therein, approved, and the request for authority for continuing said employes until not needed, granted.

The following is

THE REPORT:

"CHICAGO, June 3, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—On February 6th you allowed, upon my requisition, one Computer and one Instrument man whose time of service was to be three months, consequently their time expired on the 30th of April. You also allowed on the same date one man for the special service whose time expired on the 4th of June, and on the 13th of February you allowed another man for the special service whose time expired on the 31st of May. The requirements of the work are such that these men are all needed and I respectfully ask that you authorize the continuation of their pay until their services can be dispensed with without impairing the efficiency of the force.

Authority exists for the payment of the two men for the special service up to date but for the Instrument man and Computer you will have to issue authority covering the month of May, which I respectfully ask that you do that they may receive their pay with the rest of the force.

Respectfully submitted,

(Signed)

ISHAM RANDOLPH,

Chief Engineer."

AGREEMENT WITH P., C., C. & ST. L. RY.
CO. MAIN CHANNEL CROSSING AND
BRIDGE AT CAMPBELL AVENUE.

The Clerk presented a report from the Chief Engineer, with reference to and accompanied by agreement, in duplicate, with the Pittsburgh, Cincinnati, Chicago & St. Louis Railway Company, for bridge and crossing of the Main Channel at Campbell avenue; and the report and accompanying agreement were read.

In connection with the report Mr. Kelly presented an order authorizing and directing the President and Clerk to execute the accompanying agreement, on behalf of the District, as provided in the order; and the order was read.

Mr. Kelly, seconded by Mr. Boldenweck, moved that the report and accompanying agreement be ordered printed and placed on file, and the order adopted.

On roll call the vote stood: Yeas—Messrs. Boldenweck, Eckhart, Gilmore, Kelly, Russell and Wenter—six (6). Excused and not voting—Mr. Altpeter—one (1). Nays—Mr. Prendergast—one (1).

Upon which result the President declared the motion carried, the report and accompanying agreement ordered printed and placed on file, and the order adopted.

The following is

THE REPORT, WITH ACCOMPANYING
AGREEMENT:

"CHICAGO, June 5, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—I transmit herewith contracts in duplicate which have been forwarded to me by M. J. Becker, Chief Engineer of the Pennsylvania Lines west of Pittsburg, under which we can proceed to excavate a temporary channel beneath the tracks of the Pan Handle Railroad where the same are crossed by the Main Channel of this District. Mr. Becker requests that these contracts be executed by the proper officers of this District and returned to him for execution by the proper officers of the Pennsylvania Company.

Respectfully submitted,

(Signed)

ISHAM RANDOLPH,

Chief Engineer."

(Accompanied by agreement, in duplicate.)

AGREEMENT:

"*This Agreement, Made this day of 1895, between The Pittsburgh, Cincinnati, Chicago and St. Louis Railway Company, hereinafter designated—the Railway Company, as first party, and the Board of Trustees of the Sanitary District of Chicago, hereinafter designated—the Canal Trustees, as second party.*

WITNESSETH, The Railway Company, in order to give the Canal Trustees the opportunity of carrying forward without unnecessary delay, the construction of the Main Drainage Canal in the City of Chicago, extending westward from the Railway Company's tracks between Thirty-first and Thirty-third streets, agrees to, and does hereby grant permission to the Canal Trustees to excavate underneath its tracks at the place above mentioned, a passage-way for dredges, tugs and scows, used in the digging of the Canal, upon the following terms and conditions:

1. Said opening shall have a width of 60 feet; the tracks of the Railway Com-

pany to be carried over the opening upon such plan of girders and pile supports as shall be satisfactory to the Chief Engineer of the Railway Company.

2. The work in this connection to be done in such manner as shall in no way endanger or interfere with the traffic of the Railway Company.

3. That the entire cost of the structure provided to support the Railway Company's tracks, including the expense of a watchman during its construction and maintenance, shall be paid for by the said Trustees.

4. It is agreed and understood between the parties that this opening shall be regarded as of a temporary character to suit the convenience of said Trustees in prosecuting the work on the Canal without delay, and until proper arrangements can be effected for the construction of a permanent bridge on which to carry the tracks of the Railway Company over the Canal.

5. It is further understood and agreed, with reference to said permanent bridge, that the same shall be erected by said Trustees within two (2) years from date hereof at their own exclusive cost, including incidental expenses connected therewith. That it shall be a fixed structure, without draw or other moveable parts, not to exceed three hundred (300) feet in length, and built in one or two spans, at the option of said Trustees. The supports of the superstructure of said bridge shall be made of substantial masonry resting upon pile foundations, the character of the stone and the details of construction to be acceptable to the Chief Engineer of the Railway Company. The design of said bridge shall be subject to the approval of the Chief Engineer of the Railway Company and shall be built in conformity with the standard specifications of the Railway Company, relating to metallic structures.

In Testimony Whereof, The parties hereto have caused these presents to be executed as of the day and year first above written."

The following is

THE ORDER:

"Ordered, That the form of agreement reported by the Chief Engineer, between the Pittsburg, Cincinnati, Chicago and St. Louis Railway Company, and the Sanitary District, be approved, and the President and Clerk be author-

ized and directed to execute same on the part of the District."

REPORT ON SALE OF "ALLEN ICE HOUSE"
AT LOCKPORT.

The Clerk presented a report from the Attorney, accompanied by check (\$175), being in full of money received from the sale to E. J. Whalen of the "Allen Ice House," at Lockport, as set forth in the report; and the report was read.

Mr. Eckhart, seconded by Mr. Russell, moved that the report be ordered printed and placed on file, the action of the Attorney, as set forth therein, approved, and the Clerk ordered to deposit with the Treasurer, the accompanying check (\$175) to the credit of the District and the Law Department—Land Account—thereof.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed and placed on file, the action of the Attorney, as set forth therein, approved, and the Clerk ordered to deposit with the Treasurer, the accompanying check (\$175) to the credit of the District and the Law Department—Land Account—thereof.

The following is

THE REPORT:

"CHICAGO, June 5, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—A proposition having been made by E. J. Whalen for the purchase from the District of the Allen Ice House at Lockport, Ill., for the sum of one hundred and seventy-five (\$175.00) dollars, your Finance Committee, after examining into the matter, concluded that it was for the best interests of the District to accept said offer and directed me to close the sale. I have done so, and transmit herewith check to the order of the Sanitary District of Chicago for said amount, and recommend that the action taken be approved by you and the check be turned over to the Treasurer for deposit.

Yours respectfully,

(Signed) GEO. E. DAWSON,
Attorney."

(Accompanied by check—\$175.00.)

MONTHLY REPORT FROM TREASURY DEPARTMENT.

The Clerk presented a report from the Treasury Department for the month of May, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT :

"Balance on hand at date of last report..... \$3,995,367.16

Received from North Town Collector, Sanitary District tax account..... \$ 13,506.93

Received from County Treasurer, Sanitary District Tax Account. 50,000.00

Total..... \$63,506.93

Received from Thos. F. Judge, Clerk, General Account, rent of buildings, Western Dredging and Improvement Company..... 150.00

Received from Thos. F. Judge, Clerk, General Account, rent of buildings, McArthur Bros.. 150.00

Received from National Bank of Illinois, interest for May..... 1,254.44

Received from Globe National Bank, interest for May..... 1,263.88

Received from Metropolitan National Bank, interest for May..... 1,210.56

Received from American Trust and Savings Bank, interest for May..... 35.64

Received from Chicago National Bank, interest for May..... 1,247.61

Received from Ft. Dearborn National Bank, interest for May..... 1,245.63

\$ 70,064.69

Total cash received for month..... \$4,065,431.85

Total cash disbursed during month as per annexed schedules, viz:

Clerical Department.... \$ 897.17

Treasury Department.. 171.67

Engineering Departm't. 14,230.52

Engineering—Construction—Department..... 657,555.58

Law Department..... 2,836.45

Police Department..... 3,985.86
General Account..... 5,307.21

\$684,974.46

Balance this date, in banks as per schedule endorsed hereon \$3,380,457.39

(Signed) MELVILLE E. STONE,
Treasurer.

CHICAGO, June 3, 1895."

SCHEDULE :

Fort Dearborn National Bank..... \$701,122.08

National Bank of Illinois..... 701,962.61

Chicago National Bank..... 700,638.08

Metropolitan National Bank..... 678,859.95

American Trust and Savings Bank. 21,003.79

Globe National Bank..... 576,870.88

Total..... \$3,380,457.39

REPORT OF SANITARY INSPECTOR ON CONDITION OF MAIN CHANNEL CAMPS.

The Clerk presented a report from the Sanitary Inspector with reference to the prevailing sanitary conditions of the camps along the Main Channel; and the report was read.

Mr. Altpeter, seconded by Mr. Gilmore, moved that the report be ordered printed and referred to the Committee on Health and Public Order.

The motion prevailed unanimously, and the report was ordered printed and so referred.

The following is

THE REPORT:

"CHICAGO, June 5, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Since the submission of my last report on the sanitary condition prevailing in the various camps along the Drainage Channel, the failure on the part of several of the contractors to supply their men with wholesome drinking water which I at that time called the attention of your Board to has been remedied, and at the present time every camp throughout the entire line is supplied with an abundance of drinking water of good quality. During the month of April we had our first and only case of smallpox that had appeared on the work since the prevalence of the epidemic of 1893-4, but by prompt removal from the camp to the Smallpox Hospital and thorough disinfection of quarters occupied by patient we succeeded in preventing the further spread of the disease. During the last eight months the good

effects that have resulted from the thorough overhauling that was given to the hospital system along the Channel by the Board of Trustees has been quite apparent, as evidence of which I cite the fact that I have received but two notifications from the authorities of the Cook County Hospital stating that two patients had been admitted to their wards, while previous to that time it was no uncommon occurrence to have a dozen a week; all the contractors have at present arrangements made with private hospitals that the men are sent to when they become sick or injured; if by mistake they are taken to the County Hospital they are transferred to the hospital that has the contract for taking care of the section from which they have been taken as soon as the error is ascertained. The health of the laborers is exceptionally good, a lower percentage of sickness existing than at any previous time in the history of the canal.

Most respectfully submitted,

(Signed) WILLIAM MARTIN, M. D.,
Sanitary Inspector."

AGREEMENT FOR CROSSING OF SOUTHWEST BOULEVARD BY MAIN CHANNEL.

Mr. Eckhart, for the Joint Committee on Engineering and Finance, presented a report from that Committee, with reference to and accompanied by an agreement, in duplicate, with the West Chicago Park Commissioners for the crossing of Southwest Boulevard by the Main Channel, (the subject matter of which was presented to the Board and referred to that Committee at the meeting held April 19, 1895—page 2615 of the Proceedings), and recommending that the President and Clerk be authorized and directed to execute the said agreement, on behalf of the District, as provided in the report; and the report was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed, and, with accompanying agreement, placed on file, the recommendation made in the report concurred in and the President and Clerk authorized and directed to execute the said agreement, on behalf of the District, as provided in the report.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and, with

accompanying agreement, placed on file, the recommendations made in the report concurred in, and the President and Clerk authorized and directed to execute the said agreement on behalf of the District, as provided in the report.

The following is

THE REPORT:

"CHICAGO, June 5, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The Joint Committee on Engineering and Finance, to whom was referred the report of the Chief Engineer of April 16th, 1895, (page 2616 of the Proceedings) relating to the cutting of the Main Drainage Channel across the Southwest boulevard and Western avenue, beg leave to report as follows:

Your Committee had several conferences with the West Chicago Park Commissioners and finally appointed a special Committee of three to confer with a similar Committee from the Park Commissioners that the details of the terms and conditions upon which such crossings of the boulevard should be made might the more readily be settled. These special Committees have reached an understanding, the terms of which have been embodied in a formal agreement which has been approved by us.

We therefore transmit herewith said agreement between the Sanitary District of Chicago and the West Chicago Park Commissioners, in duplicate, and recommend that the President and Clerk be authorized and directed to execute same on the part of the District. An ordinance providing for the crossing of Western avenue has been introduced into the City Council and referred to a Committee from which a report is soon to be expected.

(Signed)

B. A. ECKHART,
W. H. RUSSELL,
THOMAS KELLY,
JOHN J. ALTPETER,
WM. BOLDENWECK.

Joint Committee on Engineering and Finance."

(Accompanied by agreement, in duplicate.)

APPLICATION FOR STREET RAILWAY RIGHT OF WAY ON KEDZIE AVENUE.

The Clerk presented a communication (accompanied by petition) from the Chi-

cago and Worth Street Railway Company, asking the consent of the District for right of way for electric surface street railway in front of District property on Kedzie avenue, as set forth in the communication; and the communication was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the communication be ordered printed and, with enclosure, referred to the Committee on Judiciary.

The motion prevailed unanimously, and the communication was ordered printed and, with enclosure, so referred.

The following is

THE COMMUNICATION:

"June 4th 1894.

To the Honorable President and Board of Drainage Commissioners:

We would most respectfully petition your Honorable Body for consent to construct and operate an electric surface street railway on and along Kedzie avenue, Chicago, in front of your prop-

erty, between Thirty-third and Thirty-fifth streets.

Yours very truly,

(Signed)

Chicago and Worth Street Railway Co.,

GEORGE W. VAN ZANDT,

President.

J. H. SMITH,

Secretary."

(Accompanied by petition.)

PASSAGE BY LEGISLATURE OF INCREASED TAX LEVY AMENDMENT TO DISTRICT ACT.

Mr. Eckhart, Chairman of the Special Committee on Legislation, made a verbal report stating that the bill amending the Sanitary District Act, with reference to increasing the District tax levy, had become a law on Tuesday, June 4, 1895, at 12 o'clock midnight, without the signature of the Governor. A complete report was promised later.

ADJOURNMENT.

On motion of Mr. Boldenweck, seconded by Mr. Gilmore, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

June 5,]

—2663—

[1895.

PROCEEDINGS

BOARD OF TRUSTEES

—OF THE—

—OF THE—

SANITARY DISTRICT OF CHICAGO.

JUNE 12, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and seventy-fifth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, June 12, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order

On roll-call Messrs. Altpeter, Bolden-

weck, Eckhart, Prendergast, Russell and Wenter—six (6), and subsequently Mr. Gilmore, making a total of seven (7) members, were present.

MINUTES.

The minutes of the regular meeting held May 22, 1895, and of the adjourned sessions of the same regular meeting, held May 24 and June 5, 1895, were approved as printed, on motion of Mr. Boldenweck, seconded by Mr. Russell.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

Construction Account—

Griffiths & McDermott, (Sec. 1, June 1,
1895).....\$ 12,436 53
McArthur Brothers, (Sec. 2, June 1, 1895) 20,693 75
Gilman & Company, (Sec. 3, June 1, 1895) 27,209 88
McArthur Brothers, (Sec. 4, June 1, 1895) 24,717 00

	CLAUSE "J"
Total Retained.	Amount released on this Voucher.
\$13,510 34	\$ 131 38
6,223 00	1,372 00

		CLYUSE "J"	
		Total Retained.	Amount released on this Voucher
The Qualey Construction Co., (Sec. 5, June 1, 1895).....		\$ 7,884 00	
Mason, Hoge & Company, (Sec. 6, June 1, 1895).....		2,376 00	\$ 135 00
Mason, Hoge & Company, (Sec. 7, June 1, 1895).....		12,439 44	
Mason, Hoge, King & Co., (Sec. 8, June 1, 1895).....		7,436 41	
Halvorson, Richards & Co., (Sec. 9, June 1, 1895).....		16,321 88	
E. D. Smith & Co., (Sec. 10, June 1, 1895)		12,040 00	
Mason, Hoge & Company, (Sec. 11, June 1, 1895).....		11,511 07	
Mason, Hoge & Company, (Sec. 12, June 1, 1895).....		14,076 79	
Mason, Hoge & Company, (Sec. 13, June 1, 1895).....		12,312 35	
Smith & Eastman, (Sec. 14, June 1, 1895)		27,785 63	
Wright, Meysenburg, Sinclair & Carry, (Sec. 15, June 1, 1895).....		10,996 13	
Heldmaier & Neu, (Sec. B, June 1, 1895)		10,381 06	15,280 38
Western Dredging & Improvement Co., (Sec. C, June 1, 1895).....		8,368 94	1,081 89
E. D. Smith & Co., (Sec. D, June 1, 1895)		7,448 77	
Angus & Gindele, (Sec. E, June 1, 1895)		4,949 44	2,592 00
Weir, McKechney & Co., (Sec. F, June 1, 1894).....		283 94	
Gahan & Byrne, (Sec. G, June 1, 1895)..		6,345 25	9,688 00
Gahan & Byrne, (Sec. H, June 1, 1895)..		440 26	5,188 97
Christie & Lowe, (Sec. I, June 1, 1895)..		8,334 38	800 00
Christie & Lowe, (Sec. K, June 1, 1895)..		10,346 87	3,475 00
The Heidenreich Company, (Sec. L, June 1, 1895).....		2,321 90	7,885 91
The Heidenreich Company, (Sec. M, June 1, 1895).....		4,982 32	4,548 32
McMahon & Montgomery Company, et al., (Sec. O, June 1, 1895).....		1,061 65	1,825 37
Mason, Hoge & Co., (Sec. 7, extra work dimension stone, rip-rap work, earth core and embankment, June 1, 1895)..		500 00	
Heldmaier & Neu, (Sec. A, extra work, completing levee 692 to 710 and below 710, final, June 1, 1895).....		4,665 60	
Total.....		\$308,009 87	

ENGINEERING DEPARTMENT.

Cameron, Amberg & Co., (stationery)...	\$ 34 78
Stromberg, Allen & Co., (stationery)....	22 22
Stromberg, Allen & Co., (stationery)....	3 75
P. F. Pettibone & Co., (stationery).....	5 75
Dennison Mfg. Co., (tags).....	5 50
Keuffel & Esser Co., (drafting supplies)	3 47
Keuffel & Esser Co., (drafting supplies)	11 93
A. H. Abbott & Co., (drafting supplies)..	22 87

F. Mayer & Co., (blue prints).....	\$ 50 74
W. A. Olmsted, (mounting maps).....	2 15
Fairbanks, Morse & Co., (cement moulds)	310 50
Treleaven Optical Co., (photo supplies).	36 31
Treleaven Optical Co., (photo supplies).	2 70
The M. E. Page Confec. Co., (cement mixers)	29 50
E. DeClark & Co., (cement pans).....	6 00
Wm. McGinnis, (gauge reading, May, 1895).....	10 00
E. Hastings, (gauge reading, May, 1895).....	10 00
Mary Rusk, (gauge reading, May, 1895)	10 00
Geo. Brainard, (gauge reading, May, 1895).....	10 00
Wm. Kirkham, (gauge reading, May, 1895).....	10 00
John McCaffery, (rent—Brighton Park, May, 1895).....	25 00
Frank S. Amick, Agent, (rent—Corwith, May, 1895).....	15 00
J. M. Abbitt, (rent—Willow Springs, May, 1895).....	20 00
O. W. Moon, (rent—Lockport, May, 1895).....	20 00
Waukesha Hygeia Mineral Springs Co., (water)	7 50
C. S. Austin, (ice).....	9 00
Chicago Towel Supply Co., (toweling)..	5 40
Isham Randolph, (traveling).....	63 50
Thos. T. Johnston, (traveling).....	11 00
Thos. T. Johnston, (traveling).....	11 55
U. W. Weston, (traveling).....	27 00
U. W. Weston, (traveling).....	33 40
H. B. Alexander. (traveling).....	40 97
Hiram A. Miller, (traveling).....	62 78
Chas. L. Harrison, (traveling).....	44 57
W. T. Keating, (traveling).....	22 72
Wm. Trinkaus, (expense).....	57 24
	<hr/> \$ 1,074 80

CLERICAL DEPARTMENT.

Waukesha Hygeia Mineral Springs Company, (water).....	\$ 3 75
C. S. Austin, (ice).....	3 00
Warner's Towel Supply, (toweling).....	2 00
	<hr/> \$ 8 75

LAW DEPARTMENT.

Stromberg, Allen & Co., (stationery)....	\$ 1 85
P. F. Pettibone & Co., (stationery).....	5 53
Cameron, Amberg & Co., (stationery)...	4 98
Callaghan & Co., (legal reports).....	2 25
John O'Connor, (abstract report).....	2 00
Frank Vander Bogart, Clerk, (Court fees).....	131 60
Waukesha Hygeia Mineral Springs Company, (water).....	3 75

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[1895.]

C. S. Austin, (ice).....	\$ 3 00
Warner's Towel Supply, (toweling).....	1 50
Geo. E. Dawson, (expense—expert witnesses).....	350 00
Geo. E. Dawson, (expense—expert witnesses).....	541 60
	<hr/>
	\$ 1,058 06

LAW DEPARTMENT.

Land Account—

Geo. E. Dawson, (accrued taxes 1894, Daggett estate, et al.).....	\$ 107 75
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GENERAL ACCOUNT.

John F. Higgins, (printing proceedings, etc., May, 1895).....	\$ 168 81
Thos. F. Judge, (pay roll and sundry expenses).....	250 96
Sharp & Smith, (vaccine points).....	22 50
	<hr/>
	\$ 442 27

POLICE DEPARTMENT.

McArthur Brothers Company, (horse shoeing).....	\$ 7 50
Grand total.....	<hr/>
	<u>\$310 709 00</u>

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the weeks ending May 25, June 1 and June 8, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, June 12, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—I beg leave to report herewith the number of employees in each

department for the weeks ending May 25, June 1 and June 8, 1895, as the same have been reported to me:

	WEEKS ENDING		
	May 25, '95	June 1, '95	June 8, '95
Engineering Dept..	150	151	155
Clerical Dept.....	4	4	4
Law Dept.....	7	7	7
Treasury Dept....	1	1	1
Police Dept.....	48	48	48
Telephone operat'r	1	1	1
Towpath Force....	1	4	3
Total employees..	212	216	219

Respectfully submitted,
(Signed) THOS. F. JUDGE,
Clerk.”

REQUISITIONS.

The Clerk presented the following requisition:

No. 937, Police Department, (sundry supplies).....\$ 239 20

Mr. Boldenweck, seconded by Mr. Rus-

sell, moved that Requisition No. 937, for the Police Department, as read and shown above, be allowed.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and Requisition No. 937, for the Police Department, as read and shown above, allowed.

REPORT ON NOTIFICATIONS TO CONTRACTORS TO PROTECT WORK FROM FLOODS AND TO PAY EMPLOYEES SEMI-MONTHLY.

The Clerk presented a report, transmitting for filing certain correspondence, being replies received from contractors on the Main Channel in response to certain notifications to contractors to protect work from floods and to pay employes semi-monthly, sent in pursuance of orders of the Board, passed at the meetings held December 5, 1894 and May 15, 1895 (pages 2342 and 2640 of the Proceedings), as set forth in the report.

The report was read, and, by unanimous consent, was ordered printed, and, with enclosures, placed on file.

The following is

THE REPORT:

“CHICAGO, June 12, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I transmit herewith for filing certain correspondence, being replies received from contractors on the Main Channel in response to notice transmitting copy of the order passed by your Honorable Body at the meeting held December 5, 1894, (page 2342 of the Proceedings) with reference to the taking of the necessary precautions for the protection of the work of said contractors against floods from the river or adjoining sections, under conditions as set forth in said order.

There are also transmitted herewith for filing, certain replies received from contractors on the Main Channel, being acknowledgments of receipt of notice of the desire of the Board with reference to the payment of their employes at regular intervals and at least twice each month, as set forth in the report of the Committee on Labor, adopted at the

meeting held May 15, 1895, (page 2640 of the Proceedings).

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk.”

(17 enclosures.)

MONTHLY REPORT FROM CLERICAL DEPARTMENT.

The Clerk presented a report from the Clerical Department for the month of May, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, June 12, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have the honor to herewith report that the total amount expended on account of and charged to the Clerical Department during the month of May, 1895, was \$897.17, divided as follows:

Salaries.....	\$891 67
General expenses.....	5 50
Total.....	<u>\$897 17</u>

There are no outstanding liabilities, and the expenses for the present month will, from present indications, be about \$950.

The total amount expended and charged to the General Account during the month of May, 1895, was \$3,410.51, divided as follows:

Salaries.....	\$2,705 34
Printing.....	361 77
General expenses.....	343 40
Total.....	<u>\$3,410 51</u>

There are no outstanding liabilities against the General Account, and the expenses for the present month will be about \$3,500.

During the month of May, 1895, there were warrants authorized and drawn against the various accounts for \$648,756.87, as follows:

Engineering Department.....	\$14,199 75
Clerical Department.....	897 17

Law Department.....	\$ 2,836 45
Treasury Department.....	166 67
General Account.....	3,410 51
Engineering Department (Construction Account).....	620,545 36
Law Department (Land Account)....	2 690 00
Police Department.....	4,010 96
Total.....	<u>\$648,756 87</u>

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

MONTHLY REPORT FROM LAW DEPARTMENT.

The Clerk presented a report from the Law Department for the month of May, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, June 11th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I submit herewith the monthly report for May, 1895.

The total amount paid out by this Department during the month is as follows:

SALARIES.

Attorneys.....	\$1,366 65
Office force.....	255 00
	<u>\$1,621 65</u>

GENERAL EXPENSES.

Court costs.	\$ 320 55
Right of way.....	435 00
Expense account...	105 00
Legal services.....	265 00
Printing and Stationary	11 25
Sundries.....	3 00
	<u>\$1,139 80</u>
Total.....	<u>\$2,761 45</u>

In the matter of the acquirement of the land known as the "Cutting Island" the amount fixed by the verdict and order of judgment as compensation for the taking of said land by the Sanitary District was deposited with the County Treasurer of Will County and the District now has the right of possession.

The suit of the District vs. Carl Moll, et al., was on trial for a period of three full weeks, for much of that time night sessions of the Court being held. A verdict was reached June 1st at about 10 P. M. after the jury had been out over twelve hours. The aggregate verdict for the several tracts of land included in the suit amounting to 127.88 acres was \$38,621.45, being an average of a little over \$300.00 per acre. A motion for a new trial was made by the defendants.

A bill for an injunction to enjoin the collection of taxes upon the Sanitary District lands in Will County has been begun, and a temporary restraining order has been made until a hearing can be had. No question has been raised in Cook County and Du Page County as to the right of the District to have its lands exempt from taxation, but in Will County the request to exempt them has been refused, and hence it has been sought to get a ruling which shall govern for the future.

The question of an agreement with the West Chicago Park Commissioners for cutting our channel across the Southwest boulevard has received attention and a satisfactory agreement has been entered into.

The Western avenue and Railroad crossings questions, arising under contracts and routine work, will occupy the Department during the coming month.

Respectfully submitted,

(Signed) GEO. E. DAWSON,
Attorney."

REPORT ON REMEASUREMENT OF ALL CONSTRUCTION WORK ON MAIN CHANNEL.

Mr. Eckhart, for the Joint Committee on Engineering and Finance, presented a report from that Committee, with reference to and accompanied by a report from the Chief Engineer, suggesting a remeasurement of the entire construction work of the Main Channel, presented and referred to that Committee at the meeting held April 19, 1895, (page 2614 of the Proceedings), recommending the appointment of R. B. Seymour as Special Engineer for said work, under conditions as set forth in the report; and the report was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed, and, with enclosure, placed on file, and the recommendations made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Russell and Wenter—six (6). Nays—Mr. Prendergast—one (1).

Upon which result the President declared the motion carried, the report adopted, ordered printed, and, with enclosure, placed on file, and the recommendations made in the report concurred in.

The following is

THE REPORT:

“CHICAGO, June 12, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Committee to whom was referred, at the meeting held April 19, 1895, (page 2614 of the Proceedings), the report of the Chief Engineer recommending the remeasurement of the Channel and computation of the amount of material excavated, under the superintendence of an engineer of recognized ability and high character not in any way connected with the District organization, beg leave to report as follows:

In response to the request of the President, made by your direction, the Western Society of Engineers of Chicago kindly sent to him the names of ten gentlemen, any one of whom by reason of ability and previous experience was qualified to take charge of such check measurement.

From this list your Committee has selected Mr. R. B. Seymour and recommended that he be employed by you for this work and that his compensation for the completed work be fixed at the sum of eighteen hundred (\$1,800.00) dollars, to be paid on the vouchers of the Engineer in such installments as he may determine.

The report of the Chief Engineer is returned for filing.

Respectfully submitted,

(Signed) B. A. ECKHART,
THOMAS KELLY,
WM. BOLDENWECK,
JOHN J. ALTPETER,
W. H. RUSSELL,

Joint Committee on Engineering and Finance.”

(One (1) enclosure.)

REPORT AND MESSAGE ON RAILROAD
BRIDGE CROSSINGS OF MAIN
CHANNEL.

Mr. Eckhart, for the Joint Committee

on Engineering and Finance, presented a report from that Committee, with reference to the policy of the Board of Trustees concerning railroad bridge crossings of the Main Channel; and the report was read.

In connection with the same subject, the President presented a message; and the message was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the report and the message of the President be ordered printed and placed on file.

The motion prevailed, and it was so ordered.

The following is

THE REPORT AND THE MESSAGE:

“CHICAGO, June 12, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Honorable Body, at its last meeting, approved of a form of agreement between one of the railroad companies and this District by which the District was to secure the right at once to make an opening across the railroad right of way sufficient for the passage of dredges and scows to engage in the work of excavation to the west of the railroad tracks, and by which the channel, when completed to its full width, was to be spanned by a stationary bridge. By reason of a lack of knowledge of the facts and of the extent of the powers of the District, the proposed agreement was made the basis of severe criticism of your action on the ground that it was a complete surrender of the water-way feature of your work and prohibited any attempt in the future at making the Channel a navigable one.

Inasmuch as your Committee has long had under consideration the matter of railroad and highway crossings, and as your action grew out of steps taken under its direction, and was taken pursuant to an order prepared with its approval, we deem it but just to your Honorable Body, as well as your Committee, that we be permitted to state briefly the policy of the Board, as heretofore expressed, in providing crossings over our Channel for streets, railroads and highways, the necessity for any agreement with railroads at the present time, and the effect of any agreements, such as that proposed, upon the future powers of the District.

The Expressed Policy of the Board.

The discussions which took place in

an attempt to settle by agreement the matter of crossings with the Santa Fe system, first especially directed the attention of the Trustees to the nature and the extent of the demands which might be made upon the District in connection with the cutting of our channel across railroad rights of way. The demands in this case were so great as to occasion a careful reconsideration of the resources of the District. The contracts for excavation were all let. Estimates of the cost of the work still to be done were made upon the basis both of swing and of stationary bridges. It was found that the cost of swing bridges for construction and maintenance would exceed that of stationary bridges by more than one and one-half millions of dollars. The item of maintenance alone was a large one. Since, under favorable circumstances, the most sanguine could not expect the undertaking by the general government of the improvement of the lower Desplaines and Illinois Rivers, so as to connect with our channel and provide a continuous waterway, and the completion of same, within a period of less than ten years, there would be no occasion to swing the costly structures erected, even had the District the money with which to build them. There was also the additional consideration that no arrangements for swing bridges for railroad crossings could be made by agreement. Condemnation proceedings would be necessary. Claims would be made for damages for the interruption of traffic. Whether anything would be awarded on this account was problematical. A large award was possible, and if made, would necessarily delay the time of completing the channel and gaining the sanitary relief sought. For, if the amount of the verdict were paid, there would not be sufficient funds to pay for excavation. If an appeal were taken without depositing the amount of the award no possession could be had for carrying on the work. If a deposit were made it would take away from the available assets for excavation and cause delay as before. Hence the Board was brought face to face with the question: "Shall swing bridges be erected, with no call for their use, for a period of years and thus delay the completion of the channel and its use for drainage purposes for two or three years longer than expected, or shall stationary bridges be now constructed for the railroad and highway crossings to be replaced by swing bridges so soon as by the improvement of the Desplaines and Illinois Rivers a continuous waterway is actually constructed capable of navigation?" There seemed

but one course open to practical men endeavoring to secure with limited means certain and speedy relief.

Accordingly the Joint Committee on Engineering and Finance by its reports of November 14 and 21, 1894, recommended to your Honorable Body that stationary bridges be erected, the same to be replaced by swing bridges when the general government had so improved the lower rivers as to furnish with our channel a continuous waterway.

These reports were approved by a majority of your Honorable Body. This policy also met the approbation of the community so far as expressions of opinion were made. The same question came up again in connection with the proposed legislation for an increased tax levy. It was at that time sought to amend the Sanitary District Act, so as to provide that swing bridges only should be constructed upon the Channel. The Legislature refused to so prescribe, sustaining the soundness of the conclusions reached by your Honorable Body, viz., that it is wise where resources are limited to provide for the essential now, and to defer the erection of swing bridges until the time arrives when they can be used. The Board at the time of reaching these conclusions expressly disclaimed any change of views with relation to the use of the Channel for navigation purposes when the time arrives; stated that it would be impossible to limit a Channel of the capacity provided to sewage purposes only, and that, considering the resources of the District, the question of swing or fixed bridges was not so much a question of preference as of possibility.

The Necessity of any Agreement with the Railroads at the Present Time.

This arises from the character of the work. The contracts for the two sections of the work nearest the city require the earth excavated to be removed from the right of way of the District, except such amounts as the District may direct to be used for grading or to be preserved for brick clay. The failure to complete any one section of our continuous Channel would delay by so much the use of the entire Channel for sanitary purposes. Only about 500,000 cubic yards of material were excavated from these two sections during the past season, being only about one-fifth of the total amount to be removed. Very little has been taken out so far this season, though nearly half the working time has already elapsed. The eight railroad tracks in the line of Campbell avenue form the most

formidable obstacle to the progress of the work. Hence negotiations have been under way for some weeks for the purpose of securing at once a temporary opening sixty feet in width through these railway embankments to admit of the passage of the dredges and scows for the continuation of the work of excavation.

If, in securing this temporary opening, the District at the same time, by agreement, can reach a conclusion as to the stationary bridge which is to span the full Channel, it is a desirable thing to do. It will save the expense and delay of condemnation proceedings to accomplish the same object, and at the same time will not exhaust the powers of the District under the Eminent Domain Act. The District will be free at any time in the future when the interests of a through navigable waterway demand it to proceed by condemnation, in case an agreement cannot be reached, to replace the stationary by a swing or movable bridge.

Since the Sanitary District, in the excavation of its Channel, cuts across the rights of way of railroad companies already in the use and occupation of such rights of way, there has never been any question as to the obligation of the District to provide at its own expense for the crossings over the Channel.

It is the Sanitary District which has for some weeks been seeking, by agreement, to secure the right of crossing which it must otherwise obtain by means of condemnation proceedings. The railroad companies have initiated no steps to that end.

The Effect of Any Agreements Such as that Proposed, upon the Future Powers of the District.

The form of agreement in question is very simple, and consists of a single obligation on the part of each party. The railroad company promises to permit the cutting across its right of way. The Sanitary District, in consideration of that permission, promises within two years to construct a bridge without draw or other movable parts. The word "permanent" used in describing the bridge is not different from "fixed" or "stationary." There is no waiver of the right, at any time when the interests of navigation demand it, to replace the fixed bridge by a swing or movable bridge, and to have the damages therefor, if any, ascertained by condemnation proceedings, in case of a failure to agree thereon.

The powers of the Sanitary District are

ample for such purpose. They are much broader than those given to railroad corporations. The act provides that "when ever any Sanitary District shall pass an ordinance for the making of any improvement which such district is authorized to make," and the question of damage to private property arises, this may be ascertained by condemnation proceedings.

The error into which many have fallen in regard to the effect of the proposed agreement has arisen from an incomplete knowledge of the situation. There is no provision and no intention to provide for a temporary opening of sixty feet in width to last for two years, at the end of which time a permanent bridge is to be erected over the completed channel, there to remain without change for all future time.

The fact that the District has, by agreement, secured a crossing and provided for the erection of a bridge without draw, does not prevent its replacing same hereafter by a swing bridge, and if necessary, to resort to condemnation proceedings for that purpose. This point has already been passed upon by our Supreme Court in a case where a waiver by implication might with much more reason have been insisted upon.

To sum up, then, we may say:

First—The policy of the Board is not new, and has not been changed, but is the same that has heretofore met the approval of the District and is consonant with the practical purpose of securing the best results with the means at command.

Second—The resources of the District are not sufficient to erect at this time swing bridges, and an attempt to do so would result in delaying for two or three years, and possibly more, the completion of the Channel and its use for sanitary purposes.

Third—The proposed agreement, when the same shall be executed, will be in the line of carrying on without further delay the work of securing for Chicago that relief which she so greatly needs.

Fourth—The future action of the District will not be in any manner limited or restricted, nor will it be precluded in the future from replacing the stationary by a swing or movable bridge.

Respectfully submitted,

(Signed)

B. A. ECKHART,
THOMAS KELLY,
WM. BOLDENWECK,
W. H. RUSSELL,

Joint Committee on Engineering and Finance."

"I fully concur in the report of the Joint Committee on Engineering and Finance. I wish to add that the action of the Board ever since it was reorganized in December, 1892, is conclusive evidence as to its position with reference to the waterway feature of the Drainage Channel.

The Sanitary District Act would have been complied with had the Trustees let the contracts, providing therein for a Channel of but fourteen feet in the clay and eighteen in the rock. Instead of that, they have secured a uniform depth of twenty-two feet at city datum or low level of the lake. It is difficult to see why this should be done were the Trustees looking to secure a Drainage Channel only.

The Chicago River at present will not permit vessels of more than sixteen feet draft to pass the LaSalle street tunnel. No one has supposed the Illinois River to be capable of improvement so as to float vessels of a draft to exceed eight to fourteen feet. The Sanitary District Channel is however more in the line of the improvements now being carried on to provide a depth of twenty to twenty-two feet of water connecting the great lakes. This depth would be of no real utility for mere drainage purposes and is a sufficient answer to charges of insincerity on the part of the Board of Trustees.

My own view of the duties imposed upon the Sanitary District Trustees by the Drainage Act may be summed up in two propositions:

First—To provide for the disposition of the sewage of the District so that it may be neither offensive or injurious to the health of any of the people of the state, by following out strictly the specifications of the act.

Second—Let this be done in such manner as not to prevent the fullest possible use of such channel as a link in a future continuous waterway.

Having always consistently held these views, I cannot see that the present erection of fixed bridges, with the declared purpose on the part of the District to replace them by swing bridges when the time comes for their use, can be regarded as an abandonment of the waterway feature of our channel.

(Signed) FRANK WENTER,
President Board of Trustees."

COMMUNICATION WITH REFERENCE TO
SAND TESTS.

The Clerk presented a communication

from the Beach Gravel and Sand Company, with reference to tests of sand used in the building of retaining walls on the Main Channel; and the communication was read.

Mr. Boldenweck, seconded by Mr. Russell, moved that the communication be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the communication was ordered printed and so referred.

The following is

THE COMMUNICATION:

"CHICAGO, Ill., June 12, 1895.

To the Board of Trustees of the Sanitary District of Chicago, Rialto Building, City:

GENTLEMEN—The undersigned is engaged in furnishing sand to certain contractors doing work on the Drainage Canal at Lemont and vicinity, bringing the same from the place of loading by boat to Chicago, transferring it from boats to canal boats and delivering it at various points along the Michigan and Illinois Canal.

Tests of the sand delivered have been made at the main office of the Drainage Board in Chicago which have found the sand up to the standard required by the specifications furnished undersigned.

Tests made at Lemont in Assistant General Inspector Miller's office have, with only one or two exceptions, found the sand delivered by undersigned considerably below the standard required—in one case as much as forty-three hundredths of one per cent below standard, but samples taken from the rejected sand, and transmitted at the request of the undersigned by Mr. Miller to the main office precisely in the condition they were in when taken from the rejected sand piles, on a second test at the main office, were found to be up to standard, as in the former case, and were again passed at the main office.

The undersigned asks your Honorable Board to permit the testing of the sand delivered by it for use on the Drainage Canal to be made at the main office in Chicago, and that the tests so made shall be final and a warrant to its customers to use the same without further tests. Those furnishing sand for use on the Drainage Canal and delivering the same by cars sell their sand at \$1.50 per yard, while the undersigned, bringing its sand

by boat, furnishes it to its customers for \$1.30 per yard. It has seemed peculiar to the undersigned that the sand which it has furnished so far should pass inspection at the main office, and yet should be found of so poor a quality at the Assistant's office. The undersigned has furnished, it knows, excellent sand to its customers, and does not feel that it ought to be subjected to delay, annoyance and loss through the whims, or otherwise, of any persons who may have the handling or general supervision of its sand after it has once passed inspection at the main office. So far as the undersigned knows, Mr. Miller has done his duty in making the tests required of him, but he receives samples of said sand only after it has been taken from the canal boats and lain exposed to the wind, dust, and perhaps, to the tampering with it by interested parties.

The undersigned hopes that your Honorable Body will take this communication into careful consideration and will grant the request herein made, as it believes that in complying with such request you will only be doing justice to the undersigned, and that is all that it asks.

Respectfully,

(Signed) *Beach Gravel and Sand Co.,*
By HENRY C. CLYBOURN,
President.
Per H."

ADJOURNMENT.

On motion of Mr. Boldenweck, seconded by Mr. Eckhart, the Board then adjourned.

THOS. F. JUDGE,
Clerk.

June 12,]

—2675—

[1895.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

JUNE 26, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and seventy sixth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, June 26, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order

On roll-call Messrs. Altpeter, Eckhart, Kelly, Russell and Wenter—five (5), and subsequently Mr. Gilmore, making a total of six (6) members, were present.

MINUTES.

The minutes of the regular meeting held June 12, 1895, were approved as printed, on motion of Mr. Russell, seconded by Mr. Kelly.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

Construction Account—
Griffiths & McDermott, (Sec. 1, June 15,
1895).....\$10,172 59

Total Retained.	CLAUSE "J" Amount re- leased on this Voucher.
\$14,325 43	

		CLAUSE "J"	
		Total Retained.	Amount re- leased on this Voucher
McArthur Brothers, (Sec. 2, June 16, 1895)	\$18,112 50		
Gilman & Company, (Sec. 3, June 16, 1895)	22,777 12		
McArthur Brothers, (Sec. 4, June 16, 1895)	20,396 25	\$ 4,655 00	\$ 1,568 00
The Qualey Construction Co., (Sec. 5, June 16, 1895).....	14,311 94	7,884 00	
Mason, Hoge & Company, (Sec. 6, June 15, 1895).....	15,734 25	2,376 00	
Mason, Hoge & Company, (Sec. 7, June 16, 1895).....	15,313,37		
Mason, Hoge, King & Co., (Sec. 8, June 16, 1895).....	15,526 87		
Halvorson, Richards & Co., (Sec. 9, June 15, 1895).....	17,494 75		
E. D. Smith & Co., (Sec. 10, June 15, 1895)	13,720 00		
Mason, Hoge & Company, (Sec. 11, June 15, 1895).....	13,522 03		
Mason, Hoge & Company, (Sec. 12, June 15, 1895).....	15,810 37		
Mason, Hoge & Company, (Sec. 13, June 15, 1895).....	13,792 18		
Smith & Eastman, (Sec. 14, June 15, 1895)	13,523 75		
Wright, Meysenburg, Sinclair & Carry, (Sec. 15, June 15, 1895).....	9,034 37		
Heldmaier & Neu, (Sec. A, June 15, 1895)	3,743 52	26,594 75	\$ 388 94
Heldmaier & Neu, (Sec. B, June 15, 1895)	10,550 92	14,184 18	1,096 20
Western Dredging & Improvement Co., (Sec. C, June 15, 1895).....	8,245 56		
E. D. Smith & Co., (Sec. D, June 15, 1895)	9,646 39		
Angus & Gindele, (Sec. E, June 15, 1895)	5,884 99	2,886 30	
Weir, McKechney & Co., (Sec. F, June 15, 1895).....	2,710 31		
Gahan & Byrne, (Sec. G, June 15, 1895).	7,448 25	9,688 00	
Gahan & Byrne, (Sec. H, June 15, 1895).	2,883 87	5,183 97	
Christie & Lowe, (Sec. I, June 15, 1895).	7,218 75	800 00	
Christie & Lowe, (Sec. K, June 15, 1895).	7,765 63	3,475 00	
The Heidenreich Company, (Sec. L, June 15, 1895).....	10,140 82	7,885 91	
The Heidenreich Company, (Sec. M, June 15, 1895).....	3,125 34	4,548 32	
McMahon & Montgomery Company, et al., (Sec. O, June 15, 1895).....	1,398 21	1,825 37	
Mason, Hoge & Co., (Sec. 6, extra— Special work, retaining embankment, repairing and raising levee, June 16, 1895).....	1,145 00		
Mason, Hoge & Co., (Sec. 7; extra work— Dimension stone, rip-rap work, earth core and embankment, June 16, 1895)	600 00		
Total.....		\$316,749 90	

ENGINEERING DEPARTMENT.

Soper Lumber Co., (stakes).....	\$ 20 00
Robt. W. Hunt & Co., (cement moulds).	161 00

A. M. Farnsworth, (Inspector's camp building).....	\$ 40 00	
Seelig & Kandler, (repairing instruments).....	34 30	
H. S. Norton, (rent, Lemont, June, 1895)	18 00	
Hiram A. Miller, (traveling).....	55 76	
		\$ 329 03

LAW DEPARTMENT.

Callaghan & Co., (law books).....	3 50	
The Will County Abstract Co., (examination of title, Allen, etc., land).....	36 00	
Geo. E. Dawson, (expense and expert witnesses).....	867 66	
		\$ 907 16

GENERAL ACCOUNT.

Chicago Edison Co., (electric lighting) ..	\$55 91
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POLICE DEPARTMENT.

John Bush, (hay and straw).....	\$ 55 30	
Edward Williams (expense).....	106 70	
		\$ 162 00
Grand total.....		\$318 215 03

Mr. Kelly, seconded by Mr. Russell, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Eckhart, Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the rules, showing the number of persons in the employ of the District for the weeks ending June 15 and 22, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, June 26, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the weeks ending June

15 and 22, 1895, as the same have been reported to me:

	WEEKS ENDING	
	June 15, 1895.	June 22, 1895.
Engineering Dept.....	156	162
Clerical Dept.....	4	4
Law Dept.....	7	7
Treasury Dept.....	1	1
Police Dept.....	48	48
Telephone Operator.....	1	1
Towpath Force.....	2	2
Total employes.....	219	225

Respectfully submitted,
(Signed) THOS. F. JUDGE,
Clerk."

MONTHLY REPORT FROM ENGINEERING DEPARTMENT.

The Clerk presented a report from the Engineering Department for the month of May, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, June 25, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I herewith transmit the reports of the Divisions of Construction and Drafting and Designing, showing the detailed operations of the Engineering Department for the month of May, 1895; also a classified statement of expenses to June 1st, 1895.

The expenses for the month of May were as follows:

Salaries.....	\$ 14,780 30
Supplies, etc.....	670 03
Regular contractors' estimates.....	596,853 83
Extra contractors' estimates.....	5,765 60

Total..... ..\$ 618,069.76

I estimate the expenses of this department for the month of June will be \$625,000.00.

Respectfully submitted,

(Signed)

ISHAM RANDOLPH,

Chief Engineer.”

“CHICAGO, June 24, 1895.

Isham Randolph, Esq., Chief Engineer:

DEAR SIR—I herewith submit my report of the work of construction for the month of May. The weather was exceptionally favorable and the amount of work done exceeded that of any previous month—its value being a little over \$675,000.

Sections O and N are still inaccessible for dredging operations and but little was done on them. On the collateral Channel, connecting Section O with the west fork of the South Branch, 10,900 cubic yards were excavated, mostly with wheel scrapers.

Sections M and L are more than maintaining their former rate of progress, notwithstanding the fact that excavation is now being made from the lower half of the Channel. The quantities excavated on these two sections were 114,700 cubic yards, all but about 4,000

yards of which were handled by four steam shovels and Heidenreich Inclines. Three of the shovels worked day and night shifts and one shovel day shifts only. The average output per shovel was 723 yards per shift. The restoring and repairing of the slopes broken by last winter's frost was continued and nearly completed. The work is in good shape and about two-thirds (65.8 per cent) of the total quantities had been excavated up to the first inst.

Sections K and I also continue to maintain former progress rates, and on the first inst. had a little more than 69 per cent of the entire quantities excavated. The work was done principally with four steam shovels, with inclines and truss conveyors—two of which were employed both day and night shifts and the other two, day shifts only. The average output per shovel was 855 yards per shift, the total output being 148,500 cubic yards.

Sections H and G have been considerably strengthened in the way of plant and substantial improvement should follow. A steam shovel and steel incline of the Heidenreich pattern—though larger—with electric light apparatus for night work has been installed at the east end of Section H; at the west end, the Hoover & Mason Conveyor has been rebuilt and is expected to be in operation during the current month. Its utility is yet to be demonstrated, but should it fulfill the expectations of its designers and builders, the section will be sufficiently equipped.

On Section G, work has been continued with the steam shovel and belt conveyor, one steam shovel and incline, one steam shovel with dump cars and a few wheel scrapers. The steam shovel with belt conveyor averaged 520 yards per shift, and the one with the incline 528 yards per day. An electric light plant has been provided for the latter and it will hereafter be employed in both day and night shifts. The total output for both sections was 57,427 cubic yards, and the amount excavated up to the first inst. is equal to about 33½ per cent of the entire work.

Section F employed one steam shovel with incline and truss conveyor of the Christie & Lowe pattern and electric light apparatus worked fifty-nine eleven-hour shifts during the month, handling 10,500 cubic yards, an average of 162 yards per shift of ten hours. Another plant a (duplicate of the aforementioned) has been provided and in service during

the current month. A suitable pit has been opened and better results may be expected; 46.4 per cent of the entire quantities in the section had been excavated up to the first inst.

Section E returns an estimate of 43,000 cubic yards for the month, of which 3,000 yards were handled with teams and 40,000 with three steam shovels. The output per shovel is as follows:

Shovel.	10-hr. shifts.	Cu. yards excavated.	Average per shift.	METHOD OF HANDLING
No. 256	19	10,000	526	Cars and locomotives.
No. 354	40	27,647	691	Cars and locomotives.
No. 403	11	2,353	235	Cars and locomotives.

The work was considerably retarded for want of motive power, two of the five locomotives being in the repair shop most of the month. Thirty-three and two tenths per cent of the total quantities in the section had been excavated up to the 1st inst.

Section D—About 64,700 cubic yards of material were excavated during the month by three steam shovels, as follows:

Shovel.	10-hr. shifts.	Cu. yards excavated.	Average per shift.	METHOD OF HANDLING
No. 165	22	12,633	574	Wagons.
No. 167	39	23,396	600	Cars and locomotives.
No. 182	52	28,664	551	Cars and locomotives.

An incline and steam hoist with small cars has been put in on the east end of the section for the purpose of cleaning up the bottom of the Channel, and a force has also been put on to trim and finish the slopes. Sixty-six per cent of the entire volume contained in the section had been excavated on the 1st inst.

Section C—Seventy thousand five hundred cubic yards were moved during the month, of which 18,815 yards were taken out with teams, shovels and wheel barrows, and 51,685 yards by steam shovels as follows:

Shovel.	10-hr. shifts.	Cu. yards excavated.	Average per shift.	METHOD OF HANDLING.
No. 10	16	2,820	176	Small cars and steam hoist.
No. 140	22	11,870	539	Small cars and steam hoist.
No. 301	36	16,325	453	Large cars and locomotives.
No. 339	39	20,670	530	Large cars and locomotives.

Two of the shovels were refitted with new boilers during the month and should now show better results. Up to the 1st inst. 51 per cent of the material had been excavated.

Sections B and A—Section B shows a substantial increase and seems to be sufficiently equipped to finish the work. Eighty thousand one hundred cubic yards were moved during the month, of which 27,000 yards were taken out with teams, cars and wheelbarrows, and the balance, 53,100 yards, by three steam shovels as follows:

Shovel.	10-hr. shifts.	Cu. yards excavated.	Average per shift.	METHOD OF HANDLING.
No. 45	18	5,100	283	Small cars and mules.
No. 59	44	20,200	459	Large cars and locomotives.
No. 391	49	27,800	567	Large cars and locomotives.

The west half of this section has been unwatered during the month preparatory to the commencement of sub-muck excavation.

On Section A the work of pumping off the water was continued and the establishment of a plant commenced. The Shailer & Schnigla Company have contracted to excavate a million cubic yards on this section and are making preparations accordingly. The proportion of the entire work done on these sections up to the 1st inst. is: Section B, 51.1

per cent, Section A, 34.1 per cent, or an average of 40.6 per cent, considering both sections together. The River Diversion Levee has been finished and forms a complete barrier against the flood waters of the Desplaines River, permitting the work to now be conducted with safety.

Section 1—The monthly estimate credits this section with 50,700 cubic yards of glacial drift and 6,300 yards of solid rock.

Of the glacial drift 4,700 yards were handled by manual labor and 46,000 yards by steam shovels, as follows:

Shovels.	10-hr. shifts.	Cu. yards excavated.	Average per shift.	METHOD OF HANDLING.
No. 177	43	12,000	279	Incline—Heidenreich pattern.
No. 179	20½	11,000	537	
No. 181	25½	12,300	482	Cars and locomotives.
No. 184	38	10,700	282	Incline—Heidenreich pattern.

The 6,300 cubic yards of solid rock were handled with the inclines of the Heidenreich pattern. Incline No. 3 handled 4,950 yards in twenty-five shifts, averaging 198 yards per shift, and incline No. 4 handled 1,350 yards in thirteen shifts, an average of 104 yards per shift. The volume of material excavated up to the 1st inst. is equal to 37.4 per cent of the whole section.

The overhaul of material into the River Diversion Levee, opposite Section A, was completed.

Section 2—The work on this section embraced excavation in both glacial drift and solid rock, comprising 31,481 cubic yards of the former and 28,924 yards of the latter. The glacial drift was moved by three steam shovels in sixty-six shifts, an average of about 475 yards per shift.

The solid rock was taken out with two cableways in 90.6 shifts, an average of 319 yards per shift. The amount of material excavated up to the 1st inst. is equal to 72.1 per cent of the entire section.

Section 3 continues to gain steadily, and will undoubtedly maintain its proper standing. The estimate for the month gives it 6,500 cubic yards of glacial drift, 63,868 yards of solid rock and 300 yards

of retaining wall. The glacial drift was moved by a steam shovel, in twenty-two shifts, averaging 296 yards per shift; 59,230 yards of solid rock were moved by four cableways in 193½ shifts, an average of 306 yards per shift; and 4,638 yards of rock was taken out with an incline and steam hoist in twenty-five shifts, an average of 186 yards per shift; 67.4 per cent of the entire excavation on this section had been done up to the 1st inst.

Section 4 also shows a decided gain, and attained its highest estimate during the past month—a total of 81,879 cubic yards, of which 57,614 was glacial drift and 23,765 solid rock. The former was excavated with four steam shovels, working 114 shifts, an average of about 505 yards per shift. The solid rock was taken out with two cableways in 70.7 shifts, an average of 336 yards per shift. On the 1st inst., 70.1 per cent of the entire quantities in the section had been excavated.

Section 5 also made its highest estimate during the month, comprising 41,600 yards of glacial drift, 12,400 yards of solid rock and 3,200 cubic yards of retaining wall; 37,727 yards of glacial drift was moved with three steam shovels in 106.6 shifts, an average of 354 yards per shift. Of the solid rock, one cableway took out 6,291 yards in forty-five shifts, an average of 162 yards per shift. The cableway also moved some glacial drift, which accounts for the small rock average. Five quarry derricks and four wall derricks were employed upon the masonry work. On the 1st inst. 56.½ % of the entire quantities on this section had been excavated.

Section 6 is credited with 13,300 yards of glacial drift, 26,400 yards of solid rock, and 2,600 yards of retaining wall. The cableways worked a part of the time in solid rock and part in glacial drift, so that it was impossible to keep a record of the averages for the full month. So far as obtainable, however, the three steam shovels averaged about 216 yards per shift, and the cableways about 315 yards of rock per shift. Sixty-one and eight-tenths per cent of the entire quantities in the section had been taken out up to the 1st inst.

Section 7 returned its largest estimate during the month, viz., 47,400 yards of solid rock and 600 yards of retaining wall masonry. The rock was moved with one cableway, averaging 219 yards per shift; two Hulett derricks, averaging 198 yards per shift; and two Hulett cantilevers, averaging 202 yards per

shift. Sixty-four and nine-tenths per cent of the entire section had been taken out up to the 1st inst.

Section 8—On this section five cableways were employed $121\frac{7}{10}$ shifts moving 37,989 cubic yards of rock, an average of 313 yards per shift. One cableway was idle about two weeks, while the main cable was being replaced by a new one. Up to the 1st inst. $71\frac{4}{10}\%$ of the entire quantities in the section had been excavated.

Sections 9 to 13 inclusive—These sections are so fully equipped and so well advanced that details seem to be unnecessary. I will therefore briefly summarize the month's work as follows:

Section 9—Forty-six thousand four hundred cubic yards of rock excavated. Eighty-one and seven-tenths per cent of entire quantities excavated on the 1st inst.

Section 10—Forty thousand six hundred cubic yards of rock excavated. Ninety and three-tenths per cent of the entire quantities moved up to the 1st inst.

Section 11—Thirty-three thousand three hundred cubic yards of rock excavated. Seventy-six and eight-tenths per cent of the entire quantities moved up to the 1st inst.

Section 12—Forty-three thousand four hundred cubic yards of rock excavated. Eighty-three per cent of the entire quantities moved up to the 1st inst.

Section 13—Twenty-seven thousand eight hundred cubic yards of rock excavated and 1,600 cubic yards of masonry laid. Ninety-three and two-tenths per cent of the entire quantities moved up to the 1st inst.

Section 14 is rapidly recovering lost ground, and at the present rate of progress will soon be at the front. The output of 86,400 cubic yards of solid rock in April was followed by one of 81,500 cubic yards for May, an aggregate of 167,900—an achievement unparalleled in rock excavation from a single mile section. The total amount excavated up to the 1st inst. is equal to $67\frac{5}{10}\%$ per cent of the entire quantities in the section.

Section 15 is gradually gaining, the output for the month being 91 per cent of the required monthly rating. The estimate gives 36,800 cubic yards of solid rock, which was handled with two steam shovels and two steam hoists and inclines.

With but few exceptions, the work is progressing satisfactorily, and it is hoped that these will avail themselves of the remarkably favorable conditions that the season now affords to recover their arrearages.

I have herein given the percentage of the total excavation done on each section up to the 1st inst. These percentages, if averaged over the whole work, show that $57\frac{3}{10}\%$ per cent of the entire excavation was done on that date.

Of the entire quantities embraced in the Main Channel and River Diversion—39,281,357 cubic yards (exclusive of the collateral channel on Section O)—22,505,337 yards had been excavated up to the 1st inst., leaving a balance of 16,776,020 remaining.

Respectfully submitted,

(Signed)

U. W. WESTON,

Superintendent of Construction."

TABLE OF AMOUNT OF WORK DONE (INCLUDING RIVER DIVER

SECTIONS.	CONTRACTORS.	MAIN CHANNEL.		RIVER DIVERSION.		RUBBLE MASONRY.
		<i>Glacial Drift.</i>	<i>Solid Rock.</i>	<i>Glacial Drift.</i>	<i>Solid Rock.</i>	
		Cubic Yds.	Cubic Yds.	Cubic Yds.	Cubic Yds.	
O	McMahon & Montgomery Co. et al.	‡547,921				
N	Hayes Bros. et al.	71,900				
M	The Heidenreich Co.	508,000				
L	The Heidenreich Co.	695,700				
K	Christie & Lowe	610,400				
I	Christie & Lowe	875,000				
H	Gahan & Byrne	178,928				
G	Gahan & Byrne	633,799				
F	Weir, McKechney & Co.	514,793		158,234		
E	Angus & Gindele	624,863		95,718		
D	E. D. Smith & Co.	1,328,400				
C	Western Dredging & Imp't. Co.	954,363		162,537		
B	Heldmaier & Neu.	806,743		212,435		
A	Heldmaier & Neu.	881,103		128,288		
1	Griffiths & McDermott	629,666	10,900	5,876		
2	McArthur Bros.	640,100	155,100	29,516		
3	Gilman & Co.	379,810	417,000			300
4	McArthur Bros.	851,100	89,600			
5	The Qualey Construction Co.	661,600	88,100			4,800
6	Mason, Hoge & Co.	573,900	189,900	112,700		4,500
7	Mason, Hoge & Co.	172,400	523,700	97,000	41,800	600
8	Mason, Hoge, King & Co.	41,600	822,900	56,600	96,900	200
9	Halvorson, Richards & Co.	71,700	809,700	37,700	16,000	
10	E. D. Smith & Co.	29,200	1,029,600	27,400	56,500	
11	Mason, Hoge & Co.	44,032	749,900	5,756	11,433	
12	Mason, Hoge & Co.	30,061	824,600	11,739		679.44
13	Mason, Hoge & Co.	32,822	982,600			1,984
14	Smith & Eastman	343,700	604,200			
15	Wright, Meysenburg, Sinclair & Carry	29,500	99,100			
Totals		13,770,504	7,396,900	1,141,550	222,683	13,063.44

Main Channel, glacial drift.....
 Main Channel, solid rock.....
 River Diversion, glacial drift.....
 River Diversion, solid rock.....
 Rubble Masonry.....

Total amount required to be done June 1st, 1895.....
 Total amount done June 1st, 1895.....

Total amount short as per contracts.....

Total value of work done under contracts June 1st, 1895.....
 Reserved..... } 12½ per cent.....
 } 10 per cent.....

Total value of vouchers paid, including those of June 1st, 1895.....
 Total value of vouchers paid for collateral work, including those of

Total disbursement, Construction Account.....

NOTE.—*Overhaul to Levee—Section 1 not included. †Overhaul to

SION) AND CONDITION OF WORK ON CONTRACTS, JUNE 1ST, 1895.

Total value of work done to June 1st, 1885, on each section.	Total value of work required to be done to June 1st, 1885.	Amounts behind as per contracts.	Amounts ahead as per contracts.	Average monthly progress called for in contracts.	Average monthly progress necessary Jan. 1st, 1886, to time of completion.	Progress made during month of May, 1885.
\$ 114,774 11	\$ 186,758 00	\$ 71,983 89	.....	\$14,366 00	\$14,644 94	\$ 2,757 10
16,399 00	138,766 29	122,367 29	.....	10,674 33	14,986 55	.....
110,236 00	87,840 76	.....	\$ 22,395 24	6,274 34	5,140 87	13,497 40
136,658 90	121,559 48	.....	15,099 42	8,682 82	7,926 55	10,342 50
152,600 00	161,833 98	9,233 98	.....	11,559 57	11,533 70	18,425 00
218,750 00	159,578 66	.....	59,171 34	11,398 49	7,178 89	16,200 00
51,889 12	174,909 98	123,020 86	.....	12,493 67	16,957 53	2,647 12
177,463 72	213,886 96	36,423 24	.....	15,277 64	14,632 96	13,579 72
160,447 66	197,831 47	37,383 81	.....	13,493 77	13,493 77	3,097 50
197,381 28	341,186 52	143,805 24	.....	23,230 53	26,990 69	11,610 00
351,195 75	441,459 95	90,764 20	.....	19,215 65	22,571 94	17,105 06
264,821 50	338,001 33	73,179 83	.....	14,695 71	17,360 69	16,567 50
275,191 83	336,664 34	61,472 51	.....	14,637 58	17,638 83	21,636 18
309,125 99	579,665 55	270,539 56	.....	25,202 85	35,435 74	.....
*261,552 46	572,427 02	310,874 56	.....	44,801 03	55,635 03	26,790 30
445,865 98	592,268 88	146,402 90	.....	21,152 46	30,636 53	38,190 00
509,328 70	544,992 30	35,693 60	.....	29,177 70	33,936 03	53,103 00
478,049 00	666,497 43	188,448 43	.....	22,982 67	36,357 44	47,313 00
275,477 50	524,044 04	248,556 54	.....	18,387 51	32,729 52	32,410 00
338,378 50	433,251 89	94,873 39	.....	26,896 13	32,371 16	31,415 00
487,636 50	501,051 96	13,415 46	.....	25,699 42	26,037 97	36,789 00
713,732 50	719,370 90	5,638 40	.....	23,979 03	26,264 41	25,766 00
633,407 30	597,006 90	.....	66,400 40	19,900 23	21,128 85	35,681 60
883,030 00	713,407 50	.....	169,622 50	23,780 25	14,817 52	32,480 00
618,456 90	591,584 10	.....	26,872 80	19,719 47	17,553 87	26,390 25
668,485 95	615,016 20	.....	53,469 75	20,500 54	20,959 47	34,394 50
749,971 22	634,200 60	.....	115,770 62	21,140 02	12,819 77	26,380 50
543,742 00	679,458 30	135,716 30	.....	22,648 61	38,123 95	59,495 00
64,074 00	188,861 20	124,787 20	.....	23,607 65	27,107 35	21,417 00
\$10,238,123 37	\$12,053,882 49	\$2,344,561 19	\$523,802 07	\$565,575 57	\$653,022 53	\$675,510 23

Cubic Yards.

.....	†13,770 504
.....	7,396,900
.....	1,141,550
.....	222,683
.....	13,063.44
.....	\$12,053,882 49
.....	10,238,123 37
.....	\$1,815,759 12
.....	\$10,238,123 37
.....	\$1,262,107 94
.....	112,511 77
.....	1,374,619 71
.....	\$8,863,503 66
June 1st, 1895.....	†640,812 67
.....	\$9,504,316 33

Levee—Section 1 included. †Including 26,300 cubic yards Collateral Channel.

STATEMENT SHOWING AMOUNT OF WORK DONE DURING THE MONTH
OF MAY, 1895—(MAIN CHANNEL).

SECTIONS.	Amount Done During May.	Average Monthly Requirement.	Deficiency for May.	Excess Over Monthly Requirement.	Per Cent. of Monthly Requirement.
O.....	\$ 588 00	\$13,271 42	\$12,683 42	.....	4.
N.....	.....	10 674 33	10,674 33	.....	0.0
M.....	13,497 40	6,274 34	.....	\$ 7,223 06	215.
L.....	10,842 50	8 682 82	.....	1 659 68	119.
K.....	18,425 00	11,559 57	.....	6 865 43	159.
I.....	16,200 00	11 398 49	.....	4,801 51	142.
H.....	2,647 12	12,493 57	9 846 45	.....	21.
G.....	13,579 72	15,277 64	1,697 92	.....	89.
F.....	3,097 50	13 493 77	10 396 27	.....	23.
E.....	11 610 00	23,230 53	11,620 53	.....	50.
D.....	17,105 06	19,215 65	2,110 59	.....	89.
C.....	16,567 50	13,443 10	.....	3 124 40	123.
B.....	21,636 18	12,901 32	.....	8 734 86	168.
A.....	.....	24 012 30	24,012 30	.....	0.0
1.....	26 790 30	44,801 03	18,010 73	.....	60.
2.....	38 190 00	20 950 88	.....	17 239 12	182.
3.....	53 103 00	29,177 70	.....	23,925 30	182.
4.....	47 313 00	22 982 67	.....	24 330 33	206.
5.....	32,410 00	18 387 51	.....	14 022 49	176.
6.....	31,445 00	26 827 41	.....	4,617 59	117.
7.....	36,789 00	25 622 15	.....	11,166 85	144.
8.....	25 766 00	21,799 22	.....	3 966 78	118.
9.....	35 681 60	19,325 00	.....	16,356 60	185.
10.....	32 480 00	22,458 34	.....	10 021 66	145.
11.....	26,390 25	19 455 05	.....	6,935 20	136.
12.....	34 394 50	20,413 93	.....	13 980 57	168.
13.....	26 380 50	21,140 02	.....	5,240 48	125.
14.....	59,495 00	22 648 61	.....	36 846 39	263.
15.....	21,417 00	23,607 65	2,190 65	.....	91.
Totals.....	\$673,841 13	\$555,526 02	\$ 103,243 19	\$221 058 30	121.21

“CHICAGO, June 12, 1895.

Mr. Isham Randolph, Chief Engineer:

DEAR SIR—The work of the Division of Drafting and Designing for the month of May was as follows:

The work of the survey party included the staking out of property lines on Sag Island for the Law Department, and some time was given to the trial of this case at Joliet.

Additional topography was taken along the left bluff of Desplaines River from a point opposite the mouth of Hickory Creek to the township line between Townships 34 and 35.

The Chicago River has been resounded from its mouth to a point about a $\frac{1}{4}$ mile west of Halsted street. The sounding sections were taken about $\frac{1}{4}$ mile apart. The notes are platted for comparison with the 1892 surveys. New sections were also sounded at the Metropolitan Railway crossing—Van Buren street, Canal street and Halsted street.

The Desplaines River survey is finished as far as Smith's Bridge. Topography on left bank is carried about $\frac{1}{2}$ mile below this point, and measured circuits have been run one mile below this same point.

The first map extending from a point $\frac{1}{2}$ mile below Brandon's Bridge to a $\frac{1}{2}$ mile below line between Towns 34 and 35 is finished. The second map to a point about $\frac{1}{2}$ mile below Treat's Island has been commenced.

The preparation of plans for regulating works, tail race and channel through Joliet was continued.

Considerable time was given to the lake level question as affected by the Main Drainage Channel.

The determination of the hydraulic ele-

ments of the Chicago River and its capacity for flow was commenced.

The testing of cement for use in retaining walls was continued, as was also the work of preparing record photographs and the maintenance of water gauges.

The platting of the Lower Illinois River map, a large scale contour map of Sag Island and the Plat Books was continued during the month. On account of the miscellaneous orders, the work on the Illinois River map and Plat Books was delayed.

Among the plats made were three plats of Manchester, a map of all borings and test pits made on Sections E and F, a plan of the characteristic cross-sections of the Main Channel, a map of the crossing of the boulevard over the Main Channel, a plat showing a proposed plan for lots on the boulevard and a map of the E. $\frac{1}{2}$ of Sections 25 and 36, T. 39 N., R. 13 E.

Profiles were finished of the C., S. F. & C. R. R. from Leavitt street to the junction with the C., M. & N. R. R. and a proposed boulevard crossing over the Channel.

Tracings were made as follows: Lots 5 and 6 on Sag Island, and index diagram for the maps of the Chicago River survey, an index diagram of the Stadia and other surveys from Summit to Lockport, two tables for the calculation of the cubical contents of retaining walls and a plat showing the locations of the Van Buren street and Metropolitan Elevated Railway bridges.

Tracings were also made of parts of the Chicago River survey maps for use in the field.

The expenses for June will be about the same as for May.

Very respectfully,

(Signed) THOS. T. JOHNSTON,
Assistant Chief Engineer.”

SANITARY DISTRICT OF CHICAGO — ENGINEERING DEPARTMENT.

CLASSIFIED STATEMENT OF EXPENDITURES DURING THE MONTH OF MAY, 1895.

CLASSIFICATION.	Eng. Expenses.		Construction.		Total for Month.		Previously Reported.		Total to Date.	
	Salaries.	Supplies, Etc.	Regular.	Extra.	Eng. Expenses	Construction	Eng. Expenses.	Construction	Eng. Expenses.	Construction
Preliminary Sundries.....							\$120,633 75		\$120,633 75	
Locating Route.....							32,222 94		32,222 94	
Drawings and Test Pits.....							16,266 50		16,266 50	
Maps, Plans and Specifications.....	\$ 645 50	\$ 54 38			\$ 697 88		33,213 38		33,911 10	
Chicago River Survey.....							17,082 66		17,082 66	
Survey of street lines adjacent to Chi. River.							7,476 32		7,476 32	
Right of Way.....	517 00	28 72			545 72		18,726 31		19,272 03	
Flood Measurements.....	445 00	61 03			506 03		15,203 02		15,709 05	
Disposal of Floods at Joliet.....	1,013 00	34 61			1,047 61		20,526 22		21,573 83	
Regular Construction.....	10,444 30	365 71	\$596,853 83		10,810 01	\$596,853 83	243,663 86	\$8,286,404 41	260,473 87	\$8,883,258 24
Extra Work—Main Channel.....							13,455 51		13,455 51	
Division North Branch Chicago River.....							9,723 42	333,707 41	9,723 42	333,707 41
Levees, Trestles and Embankments.....							3,643 51		3,643 51	
Spillway.....				\$4,665 00		4,665 00				
Tow Path.....							1,734 91	171,966 00	1,734 91	176,631 60
Building Western Stone Company's Bridge.....							1,734 91	20,518 41	1,734 91	20,518 41
Building Stephens Street Bridge.....							5,246 04		5,246 04	
Building Atchison, Topeka & Santa Fe Bridge.....							1,157 05	19,039 05	1,157 05	19,039 05
Building Mt. Forest Foot Bridge.....							985 66	22,339 89	985 66	22,339 89
Repairing and Moving Bridges.....							770 72	18,738 80	770 72	18,738 80
Office Building at Sag.....							39 17		39 17	
Saving of Building Sand.....							1,650 13	7,756 19	1,650 13	7,756 19
Mortar, Sand and Cement Tests.....	832 50	54 30			906 80		2,339 43	781 63	2,339 43	781 63
Saving of Dimension Stone.....				1,100 00		1,100 00				
Erosion Test.....							2,263 88	6,908 00	2,263 88	6,908 00
Temporary Sanitary Relief.....							1,496 75		1,496 75	
Photographs of Works.....	125 00	49 38			174 38		237 60		237 60	
Public Reports.....							2,004 73		2,179 11	
General Account.....	740 00	21 90			761 90		1,138 14		1,138 14	
Totals.....	\$14,780 30	\$ 670 03	\$596,853 83	\$5,765 60	\$15,450 33	\$602,619 43	\$632,378 18	\$8,901,655 30	\$647,828 51	\$9,504,274 73

COMPLETION OF SECTION 13 OF MAIN CHANNEL.

The Clerk presented a report from the Chief Engineer, notifying the Board that the excavation of Section 13 of the Main Channel would be completed on or before July 3, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, June 26, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I am in receipt of a letter from Assistant Engineer C. L. Harrison, in which he states that the excavation of Section 13 of the Main Channel will be completed on or before July 3d next, excepting such rock as is left to complete the masonry in mud pockets.

The last blast on the bottom lift was fired on Saturday, the 22d inst. About 300 feet of bottom remains to be cleaned up, after which Cantilevers Nos. 1 and 2 will be wrecked. Thus the excavation of one section of the rock work will have been completed in less than three years from the inauguration of the work, September 3d, 1892.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

REPORT ON DEPTH, DIMENSIONS, GRADE, ETC. OF MAIN CHANNEL.

The Clerk presented a report from the Chief Engineer, making statement with reference to the depth, dimensions, grade, etc. of the Main Channel, as set forth in the report.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, June 20, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The frequency of inquiries relating to the depth of our Channel prompts me to make the following concise statement:

The reasons for the depth adopted for

the Channel of the Sanitary District are as follows: The ultimate volume of flow determined upon for this Channel is 600,000 cubic feet per minute. The slope or grade of the Channel as finally adopted September 6, 1893 (page 1439 of Proceedings), by your Honorable Board, after careful consideration of the report and recommendations the Chief Engineer, presented August 2d, 1893 (page 1360 of Proceedings), is one (1) foot in 40,000 feet, or $1\frac{3}{4}$ inches per mile nearly, for the earth, and one (1) foot in 30,000 feet, or $3\frac{1}{4}$ in. per mile nearly, for the rock Channel. The change of grade then adopted resulted in raising the water surface at the Lockport end two feet, and in deepening the Channel as it approached Chicago to an extent which permits the width of the earth sections between the Summit Range line and Robey street to be reduced to 183.26 feet for the bottom instead of 202 feet, for the ultimate flow of 600,000 cubic feet per minute, thus reducing to a minimum the excavation above water surface.

The width of earth Channel in those sections which are under contract, prior to the change of grade hereinbefore referred to, for the maximum flow of 600,000 cubic feet per minute, was 210 feet, with side slopes of one (1) foot vertical to two (2) feet horizontal; holding the top width established for the 210 foot channel and maintaining the same side slopes, the bottom width for the new grade became 202 feet.

With a depth of 22 feet of water, the velocity for 600,000 cubic feet per minute will be at the rate of 1.26-100 miles in earth, and 1.92-100 miles in rock per hour. The wet cross section in earth for that flow is 5,412 square feet, and in rock 3,542 square feet. The cross-sections used have been demonstrated by careful computations to be about the most economical which could be adopted to give the required flow of 600,000 cubic feet per minute, as set forth in the Sanitary District law, within the limits of width therein prescribed.

A wider and shallower channel would have involved excavating a very much greater volume of material above the water line, without any compensating capacity in volume of flow. It may be stated that no material excavated above the water surface adds to channel capacity, but every foot in depth below the water surface increases the flowage capacity. The low velocity

contemplated is justified on grounds of economy in construction, because increased grade or slope means a progressive deepening from Chicago westward, until the volume of the wedge excavated would exceed the excavation involved in the channel now under construction. Furthermore, the velocity in the earth sections must not be such as to cause erosion of the bottom or sides, an action apt to take place in sandy soil or in soil which may become soft by prolonged contact with water.

The whole question of comparative cost of channels of different depths and varying widths was treated very exhaustively and presented to your Honorable Body in elaborate detail in December, 1892 (see report of the Chief Engineer, transmitting the results of computations made by Mr. T. T. Johnston, then First Principal Assistant Engineer, December 28, 1892, pages 966-70 of Proceedings). These tables are now in print, and accessible to all who wish to use them. A narrower and deeper channel would have been less costly than the one now being constructed, but the Sanitary District law fixed 160 feet as the minimum width, which limitation fixed the width in the rock channel, and the earth channel was made of dimensions giving a corresponding capacity.

Yours respectfully,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

REMOVAL OF WESTERN STONE COMPANY
TRACK FROM SECTION 9 TO SECTION 10.

The Clerk presented a report from the Chief Engineer, asking authority to expend about \$600 in the removal of the Western Stone Company track at Quarry No. 5, from Section 9 to Section 10, under conditions as set forth in the report; and the report was read.

Mr. Kelly, seconded by Mr. Russell, moved that the report be ordered printed and placed on file, and the authority to expend not to exceed \$600 as requested therein, granted.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Eckhart, Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the report

ordered printed and placed on file, and the authority to expend not to exceed \$600 as requested therein, granted.

The following is

THE REPORT:

"CHICAGO, June 25, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The easterly end of Section 10 is now completed, and it is necessary to move the Western Stone Company's track back to the line on that section from which it was moved to admit of the execution of the work.

As Halvorson, Richards & Co., are now ready to complete the westerly end of Section 9, and are hindered by this trestle, it will be necessary to lengthen the trestle bents to fit the full depth of the Channel. I propose buying the lumber here, shipping it to the site of the work and arranging with either E. D. Smith & Co. or Halvorson, Richards & Co., to do the work. The whole cost will approximate \$800, and I ask your authority for doing the work which is absolutely necessary.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

REQUISITION FOR ADDITIONAL MEN FOR
SPECIAL SERVICE—RE-MEASURE-
MENT OF MAIN CHANNEL.

The Clerk presented a report from the Chief Engineer, asking approval of his action in appointing six (6) men for special service (re-measurement of Main Channel), additional to those provided by the Rules, as set forth in the report; and the report was read.

Mr. Kelly, seconded by Mr. Russell, moved that the report be ordered printed and placed on file, and the action of the Chief Engineer, as set forth therein, approved.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Eckhart, Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed and placed on file, and the action of the Chief Engineer, as set forth therein, approved.

The following is

THE REPORT:

"CHICAGO, June 26, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—On June 7th the work of remeasuring the Main Channel of this District was begun under the charge of Mr. R. B. Seymour, who was selected for that trust by your Joint Committee on Engineering and Finance. Our survey party was turned over to him for this work, and it has been strengthened by adding three men to the grade of chainmen, salary \$62.40 per month, and three computers for the office work at salaries of \$91 per month. I ask your authority for the payment of these additional men.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

REQUISITION FOR ADDITIONAL MEN FOR
SPECIAL SERVICE (MASONRY INSPEC-
TION, ETC.).

The Clerk presented a report from the Chief Engineer, asking approval of his action in appointing seven (7) men for special service (masonry inspection, etc.), additional to those provided by the Rules, as set forth in the report; and the report was read.

Mr. Gilmore, seconded by Mr. Russell, moved that the report be ordered printed and placed on file, and the action of the Chief Engineer, as set forth therein, approved.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Eckhart, Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed and placed on file, and the action of the Chief Engineer, as set forth therein, approved.

The following is

THE REPORT:

"CHICAGO, June 26, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—During the current month

I have met the needs of the work by appointing one man on the special service, gathering statistics of labor, at a salary of \$100 per month; four masonry inspectors at salaries of \$75.00 per month; one cement tester at a salary of \$75.00 per month, and one axman at a salary of \$62.40 per month. These appointments have been made after consultation with the President, and I ask you to confirm my action covering the employment of these men until such time as their services can be dispensed with.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

AGREEMENT WITH CANAL COMMISSION-
ERS FOR REPAIRS ON DAM NO. 1,
AT JOLIET.

The Clerk presented a joint report from the Attorney and Chief Engineer, transmitting, in duplicate, agreement with the Canal Commissioners of the Illinois and Michigan Canal, for certain repairs on Dam No. 1 at Joliet, prepared as directed by report adopted at the meeting held October 17, 1894, (page 2261 of the Proceedings); and the report was read.

Mr. Eckhart, seconded by Mr. Altpeter, moved that the report be ordered printed, and, with accompanying agreement, laid over for future action.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT:

"CHICAGO, June 26, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—By the direction of the Joint Committee on Engineering and Finance (Proceedings, page 2261) we at the time prepared a form of agreement in duplicate, between the Sanitary District and the Canal Commissioners for temporary repairs to be made by them on Dam No. 1 of the Illinois and Michigan Canal, said agreement embodying the instructions of your Committee.

We now return same to your Honorable Body and recommend that the President

and Clerk be authorized and directed to execute same on the part of the District.

Respectfully submitted,

(Signed) GEO. E. DAWSON,
Attorney,
ISHAM RANDOLPH,
Chief Engineer."

(Accompanied by agreement in duplicate.)

RESOLUTION ON PRESERVATION OF PUBLIC ORDER IN DESPLAINES VALLEY.

Mr. Eckhart presented a resolution, asking the co-operation of the citizens of the valley and of the County Board of Cook County in the preservation of public order in the Desplaines Valley, as set forth in the resolution; and the resolution was read.

Mr. Eckhart, seconded by Mr. Gilmore, moved the adoption of the resolution.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Eckhart, Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried and the resolution adopted.

The following is

THE RESOLUTION:

"WHEREAS, The public press has of late shown the terrible condition of the Valley of the Desplaines as regards the prevalence of crime; and,

WHEREAS, The Drainage Channel is part of this valley; therefore, be it

Resolved, By the Trustees of the Sanitary District of Chicago, that the good citizens of the villages along the line of the Channel and the Board of County Commissioners of Cook County, be called upon to aid this Board in the driving out of the valley and these villages the lawless saloon element operating under illegal licenses, the gamblers and the vicious women now preying upon the laboring element employed on the Channel between Chicago and Lockport.

Resolved, That a copy of these resolutions be sent to the Mayor of Lemont and the Board of County Commissioners."

PAYMENT OF MATURING BONDS AND INTEREST ON BONDS.

Mr. Eckhart, Chairman of the Committee on Finance, presented an order authorizing

and directing the Clerk to draw a warrant on the Treasurer, payable to the order of the Treasurer, in the sum of three hundred and seventy-one thousand two hundred and fifty (\$371,250) dollars, to be used in the payment of maturing bonds and interest on bonds of the District, as provided in the order; and the order was read.

Mr. Eckhart, seconded by Mr. Kelly, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Eckhart, Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result, the President declared the motion carried, the order adopted, and the Clerk authorized and directed as provided therein.

The following is

THE ORDER:

"*Ordered*, That the Clerk of this District be and he is authorized and directed to draw a warrant upon the Treasurer, payable to the order of Melville E. Stone, Treasurer, in the sum of three hundred and seventy-one thousand two hundred and fifty (\$371,250) dollars, and deliver the same to said Treasurer; said sum to be used by him in the payment of the semi-annual interest and the bonds maturing on the first day of July, 1895, as follows:

Second issue of bonds, six months interest.....	\$ 71,250
Third issue of bonds, six months interest.....	75,000
Third issue, 150 bonds.....	150,000
Fourth issue of bonds, five months.....	75,000
Total.....	<u>\$371 250"</u>

APPROPRIATION ORDINANCE.

Mr. Eckhart, Chairman, on behalf of the Committee on Finance, presented an ordinance, appropriating funds of the District for the general corporate purposes of the District; and the ordinance was read.

Mr. Eckhart, seconded by Mr. Russell, moved the passage of the ordinance.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Eckhart, Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried and the ordinance passed.

The following is

THE ORDINANCE:

"Be it Ordained by the Board of Trustees of the Sanitary District of Chicago:

SECTION 1. That there is hereby appropriated out of the funds of this District the sum of eight million thirty-six thousand seven hundred and seventy-six and seventy one-hundredths (\$8,036,776.70) dollars for the corporate purposes of this District.

SEC. 2. This ordinance shall be in force from and after its passage."

ADJOURNMENT TO SPECIAL TIME.

Mr. Kelly, seconded by Mr. Eckhart, moved that when the Board adjourn it do adjourn to meet Tuesday, July 2. 1895, at 11 o'clock A. M.

The motion prevailed unanimously, and it was so ordered.

RATIFICATION AND CONFIRMATION OF
EXECUTION OF INJUNCTION BOND—
WILL COUNTY TAX CASE.

Mr. Kelly, Chairman, on behalf of the Committee on Judiciary, presented an order ratifying and confirming the action of the President and Clerk in executing an injunction bond (\$800) on behalf of the District in the suit of the Sanitary District of Chicago vs. James W. Martin, County Treasurer of Will County, Illinois, to restrain the collection of taxes on certain lands owned by the District in said county, as set forth in the order; and the order was read.

Mr. Kelly, seconded by Mr. Russell, moved the adoption of the order.

On roll call the vote stood: Yeas—Messrs.

Altpeter, Eckhart, Gilmore, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the order adopted, and the action of the President and Clerk in executing said bond, as set forth therein, ratified and confirmed.

The following is

THE ORDER:

"WHEREAS, It became necessary in order to secure a temporary injunction to restrain the sale for taxes of lands owned by the District in Will County, Illinois, to execute, on the 24th day of June, A. D. 1895, an injunction bond in the sum of eight hundred (\$800.00) dollars; therefore, be it

Ordered, That the action of the President and Clerk in executing on June 24th, A. D. 1895, an injunction bond in the name of the Sanitary District of Chicago, in the penal sum of eight hundred (\$800 00) dollars, in accordance with an order of the Circuit Court of Will County, Illinois, in the case of the Sanitary District of Chicago vs. James W. Martin, County Treasurer of Will County, Illinois, being a suit to restrain the collection of taxes on the lands owned by the District in Du Page and Lockport Townships, in the said Will County, be and the same is hereby ratified and confirmed."

ADJOURNMENT.

On motion of Mr. Kelly, seconded by Mr. Eckhart, the Board then adjourned to meet Tuesday, July 2, 1895, at 11 o'clock A. M., pursuant to motion.

THOS. F. JUDGE,
Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

JULY 2, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

ADJOURNED MEETING.

The adjourned session of the two hundred and seventy-sixth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Tuesday, July 2, 1895, at 11 o'clock A. M., pursuant to motion.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Cooley, Eckhart, Kelly, Russell and Wenter—six (6) members, were present.

VOUCHERS.

The Clerk presented the following vouchers:

PAY ROLLS.

Eng. Dept., Chief Engineer's roll (June, 1895)..... \$1,441 67

Eng. Dept., Division of Construction (June, 1895).....	\$ 5,616 52
Eng. Dept., Division of Drafting and Designing (June, 1895).....	2,875 30
Eng. Dept., Division of Records (June, 1895)	982 50
Eng. Dept., Special Service roll (June, 1895)	4,664 40
	\$15,580 39
Clerical Dept., Clerk's roll (June, 1895):...	\$ 891 67
Law Dept., Attorney's roll (June, 1895)....	\$1,288 34
Law Dept., Joliet roll, (June, 1895).....	458 34
	\$ 1,746 68
Treasury Dept., Treasurer's roll (June, '95)	\$ 166 67
General Account, General roll (June, '95)	\$ 250 00
General Account, Towpath roll (June, '95)	169 00

General Account, Trustees' roll (June, '95)	\$ 2,333 34
	<u>\$ 2,752 34</u>
Police Dept., Marshal's roll (June, 1895)	\$ 3 846 70
Total	<u>\$24,984 45</u>

ENGINEERING DEPARTMENT.

R. B. Seymour (Special Engineer — Services Re-Measurement Main Channel)	\$ 300 00
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LAW DEPARTMENT.

John P. Wilson (General Counsel, April to June, 1895)	\$1 250 00
Jos. Donnersberger, (Expert—right of way services, June, 1895)	300 00
	<u>\$ 1,550 00</u>
Grand total	<u>\$26 834 45</u>

Mr. Eckhart, seconded by Mr. Kelly, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

REPORT ON LICENSED AND UNLICENSED SALOONS WITHIN THE POLICE LIMITS.

The Clerk presented two (2) reports from the Marshal, with reference to certain licensed and unlicensed saloons within the police limits of the District in Cook and DuPage Counties, as set forth in the reports; the reports were read.

In connection with the reports, Mr. Eckhart presented an order, directing the Attorney to report at the next regular meeting what steps, if any, may be lawfully undertaken by the District in closing saloons within the police limits being conducted without legal license; and the order was read.

Mr. Eckhart, seconded by Mr. Kelly, moved that the reports be ordered printed and placed on file, and the order adopted.

On roll-call the vote stood: Yeas—Messrs.

Altpeter, Cooley, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the reports ordered printed and placed on file, the order adopted and the Attorney directed as provided therein.

The following are

THE REPORTS:

“CHICAGO, July 1, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg to advise you that on Thursday evening, June 27th, I met by appointment several of the Village Board (including Mr. Henry Koller, the President) of the Village of Spring Forest, and entered protest against the issuance of saloon license by them to saloons located along and near Archer avenue, between their village limits and Koch's bridge. Mr. Coburn, their Village Attorney, was also present, and strongly advised them not to issue such licenses. Mr. Koller promised us that action should be deferred and that he, Koller, would join Mr. Coburn in a conference with your President and the legal department of the Sanitary District, looking to the abolition of those places. After Mr. Coburn and I had left, the Board of Village Trustees convened and granted a license to John Grass and two licenses to John Contino. All of these places are more than one mile from the corporate limits of the Village of Spring Forest and so located that proper police surveillance is almost impossible.

Trusting that means may be found to prevent the further issuance of license in the territory mentioned, I am,

Your obedient servant,

(Signed) EDWARD WILLIAMS,
Marshal.”

“CHICAGO, June 27th, 1895.

Hon. Frank Wenter, President, Board of Trustees Sanitary District of Chicago:

DEAR SIR—In compliance with your instructions of date of June 24th, 1895, I have, in conjunction with Mr. Lantry, of the Law Department, made a thorough personal inspection of the saloons within the limits of the Sanitary District, except those which are situated within the corporate limits of the villages and the City of Chicago.

You will understand that this report

covers only the saloons in Cook and Du Page Counties, no reference being made to those in Will County.

The saloons which are kept under license issued by the Village of Lemont, but which are situated more than one mile and less than two miles from the limits of said village, are those of

Peter Reno, located at the west end of Brown's bridge opposite Section 9, full license. James Ash, Emerdio Mastondrea and Joe Del Morte, Peter Gentleman and Timothy Dwyer, all of Hastings.

Maggie Barbato, Michael Salvo and Joe Dell Morte full license, as co-partners, and James Ash, opposite Section six (6) on land leased from Governor Brown.

John Channeller, on Section 6 of right of way of the Sanitary District.

(The last three named are between the Illinois and Michigan Canal and the Main Drainage Channel and are understood to be in Du Page County.)

The following list is of saloons kept more than two miles from the limits of any village, mainly along and adjacent to the thoroughfare known as Archer Road. They have County Board licenses for malt liquors but in every case spirituous liquors are exhibited and sold and no suppression of this fact is being attempted: Matthew Husch, James Kirk, John Ruppert and Peter Summers.

Fred Krueger, Mrs. B. Bush, D. J. Farley, Jerry O'Leary, Daniel McNally, James Casey, Joseph Dornan and Timothy Carroll are all of Sag Bridge.

Bernard Rossi, Lawrence J. Kirk, Frank E. Michaud, ——— Scotty (on license originally issued to Fred Kruger) all near Koch's Bridge.

Joseph Grass and A. H. Buege, are near the team bridge leading from Section 2.

——— Scotty, Joseph Grass and A. H. Buege, are within two miles of the corporate limits of the Village of Spring Forest.

John Dolan of Sag Bridge has very recently opened a saloon and has made application to the County Board for a full license.

Mat. Ruppert's pavilion, Mat. Ruppert's saloon and John Cable's saloon at Sag Bridge were unable to show a license. The licenses heretofore held by them, under which their places have been operated, have been County Board licenses for malt liquors but spirituous liquors have always been sold. The same

condition applies to Mat Ruppert's place near Koch's Bridge, except that this place has but recently been opened.

John Condor and Mrs. Kate Dockensdorf, near the team bridge on Section 2, are in dispute with the Village of Spring Forest with regard to licenses and are selling upon authority assumed by reason of their applications both to the County Board and to the Village of Spring Forest.

John Contini is running an old established place within one-half mile of the Village of Spring Forest and without a license.

There is one saloon at Tiedville and one at Columbia Park, both west of the river, that are running under license of Spring Forest.

There are five saloons at Gary running under licenses issued by the Village of Summit, nearly, if not quite, two miles distant.

The saloon opposite Section H, is run by Louis Leonard under license granted by the Village of Lyons. The saloon is more than one and one-half miles outside of the corporate limits of said village, and great effort has been made to suppress it as being a great menace to not only the morals but the safety of the employes of Gahan & Byrne, who must furnish whatever patronage it has.

D. F. Mine's saloon is located between the Santa Fe Railroad and the Illinois and Michigan Canal, between Sections H and I and is run under license issued by the Village of Summit, more than two miles distant.

John J. McCaughey, West Forty-eighth street, between the Santa Fe Railroad and the Illinois and Michigan Canal (city limits), saloon running under full license issued by County Board.

In accordance with your instruction, official notification has been given to John Channeller, whose saloon is located on District right of way, to discontinue business.

If further information or particulars are desired, please advise me.

Respectfully submitted,

(Signed)

EDWARD WILLIAMS,

Marshal."

The following is

THE ORDER:

"WHEREAS, It appears from the report

of the Marshal of the District that numerous saloons are located outside of the right of way of the District, but in proximity thereto, a number of which are within two miles of incorporated towns or villages and are reported to be in operation without legal license; therefore, be it

Ordered, That the Attorney be and he is hereby directed to consider and report to this Board, at the next regular meeting, what steps, if any, may be lawfully undertaken by the Sanitary District to close such saloons as are being carried on without legal license, which are located within the police jurisdiction of the District."

REPORT ON REQUEST FOR INFORMATION
ON EFFECT OF MAIN CHANNEL
ON LAKE LEVELS.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by the communication from Col. O. M. Poe, Corps of Engineers, U. S. A., requesting certain information with reference to the effect of the Main Channel on the levels of the Lakes, presented and referred to that Committee at the meeting held May 24, 1895, (page 2653 of the Proceedings)—transmitting certain documents, pamphlets and maps, with the recommendation that copies of the same be forwarded to Col. Poe, as provided in the report; and the report was read.

Mr. Cooley, seconded by Mr. Eckhart, moved that the report be adopted, with accompanying documents, ordered printed and with all enclosures placed on file, and the recommendation made in the report concurred in.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT, WITH ACCOMPANYING REPORT AND DOCUMENTS:

"CHICAGO, July 2, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—On May 24, 1895, (page 2653 of the Proceedings), your Honorable Board referred to this Committee a letter of May 22, from Col. O. M. Poe, Corps of Engineers, U. S. A., and senior member of the Board of Engineers appointed by direction of the Secretary of War to consider

and report upon "the probable effect of the operation of the Chicago Drainage Canal upon lake and harbor levels and upon the navigation of the Great Lakes and their connecting waterways." This letter requested certain information and data bearing upon the subject matter of the order of the Secretary of War, and therein set forth.

Your Committee referred the communication to the Chief Engineer, and has received from him certain printed documents, special reports and diagrams, as set forth in his letter of July 1, attached hereto as a part of this report. These are herewith submitted to the Board, with the recommendation that they be forwarded to Col. Poe. These papers seem to respond to the several queries as fully as warranted by the present state of our information and the development of the plans and work of the Sanitary District.

As the questions raised are largely of a technical nature, your Committee does not feel called upon to review the subject matter, nor to comment upon any opinion that may be expressed in the premises. We venture to say, however, that it appears from the evidence that the effects will be small, but that an absolute demonstration is impossible in the present state of information. We may add further that comprehensive measurements of the outflow of the several lakes under all conditions and extended through a term of years, are evidently very desirable, for many public reasons.

The letter of Col. Poe is returned herewith for filing.

Very respectfully submitted,

(Signed) L. E. COOLEY,

Chairman.

B. A. ECKHART,
JOHN J. ALTPETER,
W. H. RUSSELL,
THOMAS KELLY,

Joint Committee on Engineering and Finance."

(Accompanied by communication, report, 2 typewritten documents, 3 pamphlets and 10 maps.)

(REPORT AND DOCUMENTS.)

"CHICAGO, July 1, 1895.

To the Committee on Engineering and Finance:

GENTLEMEN—Pursuant to your instruc-

tions, I submit herewith as much information pertinent to the inquiries of Col. O. M. Poe, contained in his letter to President Wenter, dated May 22d, as I have been able to collate.

Bearing upon question No. 1, I submit the following documents: "The Levels of the Lakes as affected by the Proposed Lakes and Gulf Waterways." A discussion before the Western Society of Engineers, by George Y. Wisner, L. E. Cooley, L. M. Haupt, Clemens Herschel, et al.

"The Waterway Between Lake Michigan and the Mississippi River by Way of the Illinois River." By Robert E. McMath, Commissioner of Public Works, St. Louis, Mo.

Typewritten copy of a recent discussion of lake level effects by L. E. Cooley; also, type-written report of conclusions reached as to lake levels as affected by the work of the Sanitary District of Chicago, by Thos. T. Johnston, Assistant Chief Engineer, which report is accompanied by diagrams of curves and charts of lake level fluctuations.

In answer to Question No. 2, I submit a copy of the concise report on the organization, etc., of the Sanitary District of Chicago; also, a set of characteristic cross-sections of the Channel.

Question No. 3 brings up problems not yet solved, but it may be asserted positively that at least 300,000 cubic feet per minute can be supplied to the Sanitary Channel through the Chicago River.

Question No. 4, like No. 3, cannot be answered fully at this time. The plans for work in the Chicago River have not been perfected. These plans involve deepening, straightening and widening the river in many places, and constructing bypasses where the Channel is congested by narrow bridge openings in those cases where such a course of procedure is more practicable than would be the substitution of bridges of greater opening. The slope allowed from the mouth of the Chicago River to Robey street in all of our calculations is $2\frac{1}{2}$ feet.

There is no official decision as to the sources of supply from which the deficit on the eventual 600,000 cubic feet per minute supply is to be drawn.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

"LAKE LEVEL EFFECTS ON ACCOUNT OF THE SANITARY CANAL OF CHICAGO.

A Brief by L. E. Cooley, C. E.

(This Brief was prepared for Harvey D. Goulder, Attorney, Lake Carriers' Association, and submitted to him on November 27, 1894.)

STATEMENT.

The Sanitary Canal of Chicago is now in process of construction under the authority of a law passed by the General Assembly of Illinois in 1889. This work is to be opened in 1896 or at the latest in 1897. The ultimate capacity of this channel is to be not less than 10,000 cubic feet per second when the lake is at Chicago datum (the low water of 1847) which is 4.7 feet below the high water of 1838 as established at Milwaukee. The law permits the channel to be developed through the earth sections on the basis of a capacity of 5,000 cubic feet per second, provided that the same is enlarged with the growth of population to the ultimate capacity set forth, viz: 10,000 cubic feet per second, said ultimate capacity being sufficient, in the view of the law, to so dilute the sewage of 3,000,000 people as to maintain a sanitary condition throughout the channel and in the streams into which the same is to discharge—the Desplaines and Illinois Rivers.

Under the law a Sanitary District has been organized with original powers of taxation and indebtedness, governed by a Board of nine (9) Trustees, elected by popular suffrage, and under the authority of this Board the work authorized is being prosecuted.

The work as now laid out provides for a Main Channel, which begins at a junction with the Chicago River, or rather the south branch thereof, in the southwest quarter of the city, at a point 5.8 miles from Lake Michigan, by the course of the river, and extends to the vicinity of Lockport, a distance of 28.05 miles from the point of beginning, where the water is to be discharged into the Desplaines River, and such work done along the bed thereof, for a distance of 7.1 miles, as is necessary to conduct the outflow safely through the City of Joliet.

For 7.8 miles out from Chicago, the channel is being constructed with a present capacity of 5,000 cubic feet per second, the future enlargement being simply a matter

of dredging through comparatively easy material. The 21 miles in the Desplaines Valley is through glacial drift of the most difficult character and through rock, and this part of the work is being carried out on the ultimate basis of capacity. The standard dimensions as adopted are, for 14.9 miles through the rock cut, 160 feet wide at bottom and 162 feet at the top, with a declivity of one foot in 20,000 feet; and in the earth and drift for a distance of 13.15 miles, 202 feet wide at bottom and 290 feet at the water line when the channel is carrying 22 feet of water, with a declivity of one foot in 40,000 feet, excepting, however, the 7.8 miles at the Chicago end, previously mentioned, which are being constructed with a width 92 feet narrower than the standard earth section.

The bottom of the channel, at its junction with the Chicago River, is actually 24.45 feet below datum, and at the Lockport end 30.1 feet, the total theoretical declivity being 5.65 feet. The capacity is figured on a depth of 22 feet on a conservative basis, so as to make sure of meeting any requirement of the inspectors who are to be independent agents of the State. It will be noticed that an allowance of 2.45 feet is made in the grade at the Chicago end in order surely to meet any solution that may be demanded through a connection with Lake Michigan in order to feed this channel to its full capacity. These additional works have not been provided for, nor have plans for the same been matured. Should these works be carried out on a liberal basis, the depth in the Main Channel will be increased two feet at low water.

It is proposed to open these works on the minimum capacity provided by law (assumed at not less than 5,000 cubic feet per second, but actually 20,000 cubic feet per minute for each 100,000 of population), and it is presumed that considerable work will be required in the Chicago River to pass the minimum volume without injury to navigation, extensive works of a radical nature will be necessary to provide the ultimate volume, viz.: 10,000 cubic feet per second, and several years will be required for their full development.

The volume flowing in this Channel will be regulated by controlling works at the lower end at Lockport, and by these means the discharge may be fixed and controlled

at any amount, or entirely stopped at pleasure.

Aside from its sanitary utility, the Channel is to be regarded as the most costly part of a waterway from Lake Michigan to the Mississippi, and as a useful extension of the harbor of Chicago for vessels of deep draft, and these objects were contemplated as important incidents of the work and were fully expressed as the policy of the State when the law was passed.

The question to be considered is the effect on lake levels of removing 5,000 cubic feet per second in the immediate future, and ultimately of 10,000 cubic feet per second.

Technical Consideration.

All investigations have proceeded on the basis of 10,000 cubic feet per second, and the ultimate effect on lake levels of diminishing the volume passing through the several outlets and connecting channels of the lake system by this amount. The effect of any lesser volume will be in direct proportion to the effect produced by 10,000 cubic feet; in other words, 5,000 cubic feet will produce one half the result.

In all these inquiries the lake system is to be regarded simply as a great river, subject to fluctuations the same as any stream, according to the supply of water draining thereto. It has annually its high water period and its corresponding low water period, and in some years this low water drops much lower than others, and again, in a series of years the high waters reach a limit much higher than others, all depending upon the annual precipitation and whether rain and snowfall are deficient or excessive, and also on successions of dry and wet seasons. The range of these fluctuations is much limited over the action of normal rivers on account of the reservoir action of the enormous lake expanses; and, also, on account of their great water surfaces, evaporation, wind and other effects, are important. It is assumed, however, that whatever in any degree affects one of the lakes in its water supply, will likewise in some degree affect all the others below it, depending on the area, local water supply, and the conditions of the outlet in each case. For instance, the St. Clair River runs at a higher elevation when carrying a volume of 230,000 cubic feet per second than when carrying a volume of 10,000 feet less, or 220,000 cubic

July 2,]

feet per second, the same as any other stream, and the level in Lakes Huron and Michigan is determined by the elevation of the water in the St. Clair River. In the same manner is the level of Lake Erie determined, by the volume passing through the Niagara River and the local outlet conditions of the vicinity of Buffalo and Black Rock; and that of Ontario by the volume of the St. Lawrence and the conditions at the head of the Galop Rapids below Ogdenburg. Normally, the effect should be less down the stream on account of its increasing volume, in other words, the volume of the St. Clair River is diminished by a larger ratio than is that of the Niagara or St. Lawrence.

In the investigations heretofore made, the mean discharge of the St. Clair River has been taken at 225,000 cubic feet per second, and of the Niagara River at 265,000 cubic feet per second. On the authority of L. Y. Schermerhorn, for many years assistant engineer under Col. Roberts, and republished by Charles Crosman, of Milwaukee, in his chart of lake fluctuations. These figures are based on the best available information collected by the lake survey. Assuming these figures to be correct the abstraction of 10,000 cubic feet per second will diminish the mean outflow in the St. Clair River by nearly $4\frac{1}{2}$ per cent. and in the Niagara River by about $3\frac{3}{4}$ per cent. On lines of reasoning obvious to those unacquainted with hydraulic principles it is apparent that the ruling depth in the rivers at mean lake level cannot be lessened by an amount greater than these percentages. Applying hydraulic principles the effect will be only a fraction of that indicated by the reduction in volume. The writer had the honor to lay the foundation of the present project in a report drafted for a Committee of the Citizen's Association of Chicago in 1885, which was adopted by said association as the basis of promotion. His professional experience has lain along the lines of river hydraulics and naturally the first matter to consider was the effect on lake levels of so bold a project, and this he satisfied himself of before the proposition was ever suggested. In 1886-7 the matter was considered by the Drainage and Water Supply Commission, an engineering organization officially constituted to determine a plan for sewage disposal, and this Commission also satisfied itself upon the

subject before committing itself to the project. In January, 1888, the matter having been publicly raised, the writer discussed the question publicly for the first time in a brief, entitled "The Lakes and Gulf Waterway", now out of print. Three editions were published aggregating 15,000 copies. Later in 1888-9 the matter was discussed at great length before the Western Society of Engineers by several well known hydraulic engineers, and the discussions were published in the Journal of the Association of Engineering Societies in March, 1889, reprinted as a special edition of 5,000 and issued by the Citizen's Association of Chicago. In this discussion the matter included in the brief upon the Lakes and Gulf Waterway was republished.

The discussion before the Western Society of Engineers may be considered as exhaustive, so far as the data existing at that time are concerned, and very little original information has been collected since. It was fully recognized that the data was inadequate for a positive determination, and the matter was approached by the several writers from various hydraulic standpoints, and the conclusions reached are to be regarded as setting limits rather than a specific amount. The concurrence of opinion was, however, most remarkable, and the actual results deduced varied between 0.2 feet and 0.4 feet, as the probable effect of removing 10,000 cubic feet per second through a new outlet. The effect at low water would be somewhat greater and at high water somewhat less than at mean stage.

In 1891 2 some measurements were made of the discharge of the Niagara River opposite Black Rock. These observations indicate that the mean discharge of this river has been taken too high. They cover an inconsiderable range of lake fluctuations, there being but one low water observation and none much above the medium stage. These observations seem to indicate at and near low water an effect of about 0.3 feet. At medium and high stages the conclusion has been drawn that the effect would be greater. As such deduction is at utter variance with all experience in hydraulics any conclusions from these observations must await further measurements made at extreme low water and also the necessary measurements at high lake, when, no doubt, the observations made will be found

to indicate normal variations. These observations are printed in the report of the Chief of Engineers, U. S. A., 1893, page 4361. The official report ventures its inferences with proper caution, considering their singular character.

In a paper read before the Western Society of Engineers in October last, Mr. T. T. Johnston, First Assistant Chief Engineer of the Sanitary District, concludes that no supposable condition could make the effect as great as 0.5 feet. Mr. Johnston approaches the matter largely on the basis of analogy with our large western rivers, in the investigation of which he spent several years of professional life.

All data and opinions up to this time seem to point to the conclusion that between low water and high water and over a range of four feet, there is a variation in discharge of over 100,000 cubic feet per second, and that to lower lake levels by 0.4 feet would take over 10,000 cubic feet per second. For the purposes of discussion the effect may be assumed at 0.3 feet until determined by actual observations of the most painstaking character.

That there are many reasons for making these observations, in order to ascertain the effect of the deepened channels, of ship-canal and water power schemes, and also for scientific purposes is evident. When the facts are properly ascertained and valued the effects of any given cause will reduce to a question of plain demonstration rather than of speculation.

Discussion.

The question at issue is a very sober one, the interests concerned are many and important, and conclusions are to be arrived at candidly and without distortion. If great public purposes may be attained without substantial injury to important interest, no objection should lie; and again, if injury is to occur, objection should content itself in providing the proper remedy.

It is assumed that any injury attaches to the effects produced at or near low water when the available depths for navigation are least.

It will be contended that the effects on the interests of navigation are immaterial; and further, if they be not so considered that the remedy may be easily applied. It is proposed to develop the several considerations which bear upon the question.

1. The Detroit River has been deepened at the lime kiln crossing from an original depth of 13 feet to 21 feet; the St. Clair Flats from 9½ feet to 16 feet, with work now in progress for 20 feet; work is in progress at the head of the St. Clair River, at the entrance of the Detroit River, and both above and below the lime kilns for 20 and 21 feet. The St. Mary's River had an original depth of 9½ feet, which was increased to 16 feet, and work is in progress both above and below the rapids for 20 and 21 feet. The Niagara River is having its barrier roof at the outlet of Lake Erie cut down to 21 feet to extend deep water down to Tonawanda. The Canadians deepened the reef at the head of the Galop Rapids below Ogdensburg from 10 to 16 feet.

All these changes in outlet conditions necessarily have affected and will affect lake vessels, and some of them doubtless by sensible amounts that may be greater or less than that produced by the decrease in volume of water due to the new outlet at Chicago. This question has never been raised except in relation to the Canadian improvement at the Galop Rapids, and in that case was dismissed as immaterial after a learned technical discussion. (See report of Chief of Engineers, U. S. A., 1882, page 2470, *et seq.*)

It may be said with confidence that had the question not been raised in conjunction with the Chicago Sanitary Canal all lake interests would have been equally oblivious to any injury that may follow: In other words, the effects are so obscure and ill-defined as to make their practical detection impossible by the ordinary commercial agencies.

2. If it were not known from technical considerations that lake levels were to be changed by 0.3 feet (assuming that amount to be correct), it would be practically impossible to determine the fact by any measurements that can be made, or observations on lake levels continued for a century, and for the following reasons:

a. The mean annual fluctuations between the high water of late spring and early summer, and the low water of late autumn and winter is, for Lakes Michigan and Huron 1.34 feet; Lake Superior 1.2 feet; Lake Erie 1.55 feet; Lake Ontario 2.07 feet. These fluctuations vary greatly in different years.

b. The fluctuation over long periods is from four to five feet, as from the high water of 1838 to the low water of 1847, a range of 4.7 feet from Lakes Michigan and Huron, and still more to the low water of 1891-2. These fluctuations are irregular as to period, but usually pass over a range of three to four feet every five to seven years.

c. Every change of the wind produces effects from a few tenths to extremes of several feet, depending on velocity and direction.

d. Rapid changes of barometric pressure produce sensible effects. A high barometer on Lake Michigan and a low barometer on Lake Huron can easily shift large volumes of water through the Straits of Mackinaw and make a difference of level of one foot between the two lakes, and there are observations indicating such a result. A high barometer on Lake Huron and a low one on Lake Erie will increase the discharge through the St. Clair and Detroit Rivers, and possible the discharge of the Niagara River may be varied from this cause.

e. There are periodic fluctuations occurring at short intervals of less than one hour, even in the calmest weather. Automatic tide gauges show these fluctuations at all times, frequently of several tenths of a foot, and they are known on many occasions to have much exceeded one foot.

f. The difference in evaporation, one year with another, may easily exceed the volume to be abstracted. Ten thousand cubic feet per second would remove from the combined surface of Lakes Huron and Michigan in one year 2.97 inches of water, and this is only one-half the difference in evaporation for the years 1867 and 1868, as reported by the lake survey.

g. The excess of water required to mature a corn crop over that required to mature a crop of small grain throughout the water-sheds of Lakes Huron and Michigan would supply the Sanitary Canal of Chicago for several years.

Without raising additional points, supposing that observations for twenty years after the Sanitary Canal is opened, are compared with observations for twenty years previous, and it is found that the mean level during that period has stood 0.3 feet lower, would the evidence be conclusive? Might there not be changes in

climatic conditions? May not the inhabitation of the water shed change conditions of drainage and absorption? May there not be carelessness in gauge readers and changes in reference bench marks in forty years? Are not the outlets and shallows undergoing changes and improvements? Finally, take the records of fluctuations since 1838, nearly sixty years, and consider them carefully, are we not prepared to believe that the next twenty years will show a higher mean lake surface than the last twenty, even after allowing 0.3 feet.

If the normal changes in lake surfaces are so large and various as to obscure a specific change relatively small in amount, so that a vessel owner is obliged to employ experts and make critical scientific examinations through a series of years to ascertain if he be injured, we may relegate the matter, for practical purposes, to the purely scientific field. Under practical conditions, are vessel owners loading vessels to margins of 0.3 feet, or do they even work as close as that in ship canals where water level conditions are under control within close limits.

3. Any changes that have been made in lake levels heretofore, have been the results of deeper channels, to which harbors and shipping had to conform, so it became a matter of no moment to any vested interest and could at most have curtailed subsequent development by a very small amount. Any effect due to the Sanitary Canal of Chicago will occur on the eve of the opening of the new Channels through the connecting shallows, and is not of importance to interests that are vested on present depths, and at most can effect prospective interests in this degree—that they will develop on a basis of 19.7 feet and 20.7 feet, rather than 20 and 21 feet. If lake interests are to look forward to a progressive deepening of the connecting Channels in the future as in the past, and an ultimate project to the high seas of not less than 26 feet, then the matter may be dismissed, as the movement for still larger depths will take effect before vessel interests have generally exhausted the provisions that are now being made.

4. Assuming that the effect will be material, the remedy therefor is to be considered. In a discussion in the Marine Review of September 7, 1893, Gen. O. M. Poe, in charge of the work through the con-

necting shallows of the lakes, in reply to an article by Mr. G. Y. Wisner, Civil Engineer, advocating the control of the level of Lake Erie by means of a dam at the head of the Niagara River, pointed out the cheap character of the work required to secure greater depths, should they be found expedient.

Aside from the works already provided for in connection with the new Channel at Sault Ste Marie, the cost of securing a navigable depth of twenty feet, is less than four million dollars, or inside of one million dollars for each foot in excess of sixteen feet, the ruling depth for many years past. Future increase in depth will doubtless be more expensive as the quantities of material will probably increase faster than the cost will diminish on account of improved methods.

It is sufficient here to point out that the navigable depth may be readily increased, and at considerable cost as measured by the benefits. Conceding the extreme effect of the Sanitary Canal, it will add to the cost of deeper Channels in the future not over one per cent of the ultimate investment in the Chicago enterprise. This will be offset many times when that enterprise is completed so as to be suitable for a harbor for lake shipping without cost to the General Government, to say nothing of the advantage to all lake interests that will ultimately result through a navigable connection with the Mississippi Valley.

5. In the *Detroit Free Press* of January 8th and 11th, 1889, appeared two interesting communications upon the effect of the proposed water power canal at Sault Ste Marie on the level of Lake Superior. This Canal proposed to take out some ten per cent of the volume flowing over the rapids, and it was contended that the level of Lake Superior would be reduced thereby nearly six inches diminishing by that much the depths of the U. S. Canal and the approaches thereto.

Gen. O. M. Poe, in his reply, deprecates any alarm to the interests of navigation, and, admitting for the sake of argument the effect alleged, says: "A simple, easy and inexpensive way of remedying the evils which the writer of the article seems to fear would be to reduce the cross-section of the river by building a spur dam at the head of the rapids, thus intercepting an

area equal to or even considerably less than the cross-section of the water power canal;" and again that it "surely would not require a construction of any great magnitude or cost, nor would it tax the ability and resources of the engineer to an overwhelming degree."

The same methods can be applied to the St. Clair, Detroit and Niagara Rivers. It will be objected that local increase of velocity will thereby be occasioned, detrimental to the interest of navigation, but this will probably not be considered a serious matter by the official mind in view of the dyke built in connection with the deep Channel through the Middle Neebish for the evident purpose of counteracting any effect which this new Channel may have in lowering the water level in the St. Mary's River above, and at the Soo.

Without passing on the quality of this solution, it is sufficient to say that any ill effects can be met by narrowing the outlet Channels, an adjustant that nature itself might provide in the course of time as it meets all abnormal disturbances of the balance of its forces.

6. A favorite project of the writer, which he has developed on former occasions, is to fully control the outflow of Lake Superior by work on the Sault Ste Marie Rapids, for the purpose of permitting a much large supply of water to be taken from the Lakes at Chicago for the purpose of improving the low water navigation of the Mississippi River.

The high water period in Lake Superior is later than in the lakes below, and the water therefrom comes in on top and behind to swell and prolong the high water stage. Suppose that the flow from Lake Superior is restrained during the spring and early summer, and is allowed to come out later in the season and during the winter. It is apparent that high water on the lower lakes will be restricted and the lower stages better maintained. It is estimated that by thus controlling the outflow of Lake Superior it would be feasible to remove three or four times the volume provided for in the Sanitary Canal, or 30,000 to 40,000 cubic feet per second without impairing low water stages or the minimum depths available for navigation.

If this proposition is feasible from a technical standpoint, then sufficient control

of Lake Superior to correct any effect that may be occasioned by the abstraction of 10,000 cubic feet per second, presents no engineering difficulties of a serious character.

7. It has been proposed to control the level of Lake Erie by a dam across the Niagara River. Such a project has been seriously advocated for some time by G. Y. Wisner, Civil Engineer, of Detroit, and the proposition was presented to the Toronto Deep Waterway Convention in September last by the Cleveland Delegation and heartily endorsed by the assembly. The arguments advanced are to improve the depths at the lime kilns and vicinity and in the lake near the mouth of the Detroit River, and in all the harbors of Lake Erie and the approaches thereto. This project has been advocated entirely independent and apart from any considerations based on the effect of the Sanitary Canal of Chicago.

The project has great merit and hardly needs more than a clear statement of what it is proposed to do to commend itself. If any such project is to be carried out, it effectually disposes of the Chicago question, for it will be feasible to control and additional depth on Lake Erie several times any effect that can be assigned to the Chicago enterprise.

8. The movement for ocean navigation into the lakes that is now beginning to crystallize, and the sentiment for which was voiced by the international convention at Toronto in September last is one which will excite a deep and growing interest throughout all the region tributary to our lakeboard and is likely to grow in force more rapidly than any one realizes who has not made a deep study of the economic factors and the engineering possibilities. When such a movement materializes into engineering forms our lake problems will be looked at from a very different standpoint and the matter of controlling lake levels and meeting such problems as that at Chicago will take on a more purely incidental character.

9. The introduction of high powered vessels of deep draft to carry large cargo with speed will bring to the mind of practical navigators a question which has not heretofore appealed to them on drafts of sixteen feet, and that is the necessity of wider channels and ample clearance be-

neath the keel. It will be found difficult to handle vessels in a crowded stream with only one or two feet beneath the keel and under the influence of varying currents and streams, and that no considerable speed can be made under such conditions. It has been stated that the great Atlantic liners are unable to make their best time in less than a thousand feet of water, and every one acquainted with western river navigation is familiar with the effect of an attempt at speed when the depth is small in proportion to the draft of boats. The interests of lake navigation to-day are certainly sufficient to justify channels of 24 to 26 feet, even though the harbors should be limited to twenty feet, and should an ultimate depth of twenty six feet be the future policy, the connecting channels should be deepened to thirty feet and upwards. If any such development is to be the logical outcome of growing lake interests the effect of the Chicago Sanitary Canal sinks into insignificance.

Conclusion.

We may conclude as follows:

1. That the data is insufficient to reach a conclusion as to the specific effect and that the information available indicates limits not less than 0.2 feet and not exceeding 0.4 feet, between which the final determination will lie.

2. That the magnitude and character of lake fluctuations are such that if the effects were unknown from purely scientific observations and measurements and technical analysis they would never be discerned or appreciated: in other words, lake phenomena are so active and of such amplitude that results relatively small are entirely masked.

3. That conceding any effect that may be claimed, several remedies are feasible therefore, any one of which can be applied at a cost relatively small as compared to the cost of the Sanitary Canal of Chicago, and that the expense of such application will be a small part of the benefits which lake interests will ultimately derive through that work.

4. That the future of lake interests and their seaboard connections will demand a radical deepening of the shallows of connecting channels, and a control of lake levels so that the interest in the question raised will reduce to a technical discussion in hydraulics.

5. That a careful remeasurement of the outflow of the several lakes under all conditions is desirable as the only final arbiter of any lingering doubts, and also for the more important purpose of projecting future works of a radical character and valuing the effects thereof.

The discussion has proceeded on the basis of the effect of 10,000 cubic feet per second. It is proper to call attention to the fact that it is proposed to open the Channel in 1896 or 1897 on the basis of 5,000 cubic feet per second, and that extensive improvements of a radical character must be made before the Channel can be utilized to the full capacity ultimately contemplated, and that several years will elapse before these are fully consummated. The time will, therefore, be ample to make exact determinations and without prejudice to any material interest.

There is submitted as part of this brief a reprint of a discussion before the Western Society of Engineers, entitled, "The levels of the Lakes as affected by the proposed Lakes and Gulf Waterway;" also a map on a scale of two inches per mile, showing the location of the Sanitary Canal of Chicago, with profile and cross-sections thereof; also a popular description of the work in progress, prepared by the Chief Engineer of the Sanitary District.

This discussion is not to be regarded as the official expression of the Board of Trustees, but rather as the individual view of one of the trustees, who was the first Chief Engineer of the District, and a promoter of the enterprise from its inception.

Nov. 26, 1894.

Lake Level Effects.

[*Addenda to Brief of November 26, 1894.*]

The brief prepared for Mr. Harvey D. Goulder, Attorney for the Lake Carriers' Association, in November last, should be emphasized along the line of the amount of clearance beneath the keel, as particular stress has recently been laid on the value of small changes in depth.

The recent fleet that is built to utilize the new channels of 20 and 21 feet is actually moulded for a draft of 18 feet, and this will be substantially the maximum loaded draft. The reason is obvious: Large vessels must have some clearance in order to navigate with any freedom and safety, and two or three feet is a small enough margin for safety, consider-

ing the obstructions that may lie along the bottom, as sunken logs, and boulders carried in by the ice; and, also, for the reason that lake fluctuations are too erratic to make a closer margin safe. Under these considerations the value of a minor change of level, such as may be produced by the Sanitary and Ship Canal of Chicago, becomes a matter of relatively small consequence through the deepened connecting channels of the several lakes.

The same conclusions apply to the harbors, only in less degree. The larger harbors will surely be deepened to meet the requirements of the new fleet. Considering dredging methods on the practical side a small fraction of a foot partakes of a paper discrimination of little moment outside the office. The smaller harbors, frequented by boats of light draft, engaged in the lumber and coasting trade, are so much under the influence of beach movement and other deposits that it is a wise navigator indeed who can tell within a few inches how much water he can carry on successive trips.

The only practical rule followed is to go safe, and the margin of safety is not measurable by the limits assigned to the effect of the Chicago Canal. If it be admitted that the working draft of vessels will be affected at all, the matter is surely one incapable of practical valuation on the financial side. It belongs to the indefinite realm, like rain, dew, fog, sunshine, temperature, evaporation, etc., small margins in which are incapable of valuation in relation to material affairs, and the most that can be said is that certain tendencies make for good, while others make for bad, and that all effects are relative. In summing up the questions, positive and negative results must be considered, and a balance struck with reference to the common welfare.

Unquestionably the entire Chicago enterprise is prejudiced by the pessimistic talk against the ship canal and navigation idea. As long as the idea of a scheme of national benefit, through the connection of the lake region with the Mississippi Valley, was held out as a realizable project of the early future, the people bordering the lakes were willing to resolve their doubts in regard to lake levels in Chicago's favor, as were also the people along the Illinois and Mississippi Rivers, willing to waive their doubts on the sanitary side.

The reaction against this idea is of the most ephemeral character, and such as occurs periodically in the history of all great enterprises. The people of the State at large are almost unanimously in favor of the carrying out of the waterway idea on the broadest possible lines, and have fully expressed their policy in this regard through the General Assembly in the "Act to promote the construction of Waterways," passed June 14, 1895, in the following language:*

"It is hereby declared to be the policy of the State of Illinois to procure, as soon as practicable, the construction of a trunk waterway through the State from Lake Michigan via the Desplaines and Illinois Rivers to the Mississippi River of such dimensions and capacity as to form a homogeneous part of a through route from the Atlantic seaboard to the Gulf of Mexico."

This policy represents also the views of a large majority of the people of this city, and there is little question but what matters in connection with the Chicago enterprise will shape themselves along these lines in the near future, and further, that the State will enforce the broad view in due season.

I assume that Chicago must sooner or later meet the issue, not only on the side of the lakes, but also on the side of the Mississippi Valley, both on lake level and sanitary effects. She will have but one valid defense, and that is along the lines which sees Chicago's greatest good in the good of the State and Nation.

(Signed.)

L. E. COOLEY.

Chicago, June 21, 1895.

*This bill was vetoed by the Governor on June 26th, after the adjournment of the General Assembly.

"Changing the Level of the Great Lakes."

This discussion has been precipitated by the existing controversies as to the effect the Main Drainage Channel of Chicago will permanently have on the levels of the Great Lakes, excepting, of course, Lake Superior. This Channel will form a new outlet from the lakes similar to that by way of the St. Lawrence River, though of lesser magnitude. It has been held by various authorities, that the effect will be to permanently lower the level of the lakes all the way from two to twenty-four inches, and in a corresponding degree injure the

harbors of the lakes for the improvement of which many millions of dollars have been expended. A lowering of a few inches, say not exceeding four or five inches, will not generally be considered of great moment. The present purpose is to discuss the subject from a physical rather than a financial point of view.

There are a number of causes in the process of development, the influence of which is to permanently lower the level of the lakes, some of which are of immediate importance. The Drainage Channel, a work of national importance in a commercial sense, has been given more prominence than any other. Those interested in the Niagara water power, a purely private enterprise, contemplate its influence with fear, but say nothing about the influence their own works tend to exert. Members of the Corps of Engineers, U. S. A., have publicly asserted that its influence would be bad. A gravity canal from Huron to Erie is among the possibilities and water power schemes are afloat to utilize the fall from Superior to Huron. The manner in which these causes lower the levels is of two kinds, the one by diminishing the flow through the channels connecting the lakes and the other by destroying the conditions that cause one lake to be higher than another.

The practicability of permanently raising or lowering the lake levels is forcibly suggested by the changes of levels constantly in process due to natural causes. The lakes rise and fall just as a river does and for the same reasons, though not in a manner so intensely manifest, and the corresponding changes of level are those only of prime importance since the changes endure through months and even years at a time. All other changes of level are of a very temporary nature and endure only a few minutes or a few days at most. Waves may be ignored entirely. Under the influence of certain storms the whole mass of water in a lake may, for a limited time, be set to rocking back and forth, the water surface at the one side of the lake rising a foot or two while a corresponding depression is taking place at the opposite side, the process reversing after ten or fifteen minutes, the rise being displaced by a depression and vice versa. Lunar tides probably exist, though in so small a degree as not to be distinguishable. Varying

barometric pressure on different parts of a lake may have influence but for a short time only. All these changes of short duration may, however, be neglected in comparison with the changes due to the varying quantities of water delivered by tributaries, either on the surface or subterranean. In the spring of the year rainfall is plentiful, the tributary streams are in flood and the lakes rise. The reverse takes place in the fall. It happens sometimes, if evaporation may be supposed to be a constant, that more water flows into a lake in the course of a year than flows out, with the result that the lake is at a higher level at the end of the year than at the beginning. This process has been known to recur through a period of years, the level of the lake being raised a few inches year after year, and then a reverse process would have existence for a few years. A chart was prepared by Mr. Charles C. Crossman, of Milwaukee, in 1891, which records these changes of lake levels for a long series of years for each of the great lakes. They are so arranged that the variation of rainfall may be compared with the variation of lake level. They are based on average elevation of water surface for each month during the period covered. They are reproduced here as Diagram No. 1, and need no further explanation. A similar chart, covering a longer series of years, and prepared by Gen. O. M. Poe, Corps of Engineers, U. S. A., forms Diagram No. 2, but it applies to Lakes Huron and Michigan only, these two lakes being at the same level. Particular attention is invited to these charts.

Diagram No. 3 is a profile of the lakes from Duluth to the head of the St. Lawrence River, showing Lake Superior about twenty feet higher than Lakes Michigan and Huron, the latter lakes being at the same level because the Channel connecting them is so large. Lake Erie is about nine feet lower than Lake Huron, and 360 feet higher than Lake Ontario.

The Niagara Falls are between Ontario and Erie, with a fall of 160 feet. If the fall was 1600 feet instead of 160 it would make no difference with the level or outflow of Lake Erie. In other words, the presence or absence of Lake Ontario cannot affect the level or outflow of Lake Erie. Similarly, the presence or absence of Lakes Huron and Michigan would have no effect on the levels or outflow of Lake Superior. The Sault Ste Marie Rapids are, in this connection, the parallel of the Niagara Falls and intervene to effect the same result. There is not a sheer fall over the Rapids, but the fall or slope over them is at the rate of about twenty feet per mile. They have a length of 3500 feet, width of 2300 feet and mean depth of between two and three feet. It follows that the Drainage Canal of Chicago cannot in any way affect the levels or outflow from Lake Superior. Lakes Michigan, Huron, Erie, Ontario and the connecting rivers are concerned.

It may be well to state the fundamental and the simple principles on which the direct treatment of the question is to be based. Diagram No. 4 represents a receptacle for water in the same sense that, in

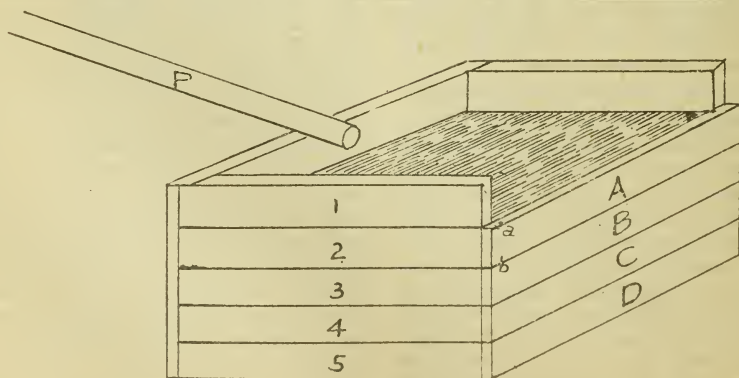


DIAGRAM NO. 4.

algebra, X represents any quantity. While the diagram shows a simple box, with the sides formed of the planks or boards marked 1, 2, 3 &c., and A , B &c., still all that is to be said of it applies equally well to any receptacle for water having a great depth or insensible velocity of water in it, be that receptacle a reservoir, lake, tank or pond &c. &c. The removal of the plank or barrier A will result after a time, in lowering the water level to the top edge of plank B , at which elevation it would stay. The same result would happen if the barriers 1 and 2 were removed instead of A . The removal of the barrier results in a definite and permanent lowering of the water surface. Suppose water to flow into the receptacle through the pipe P , just as water flows into Lake Huron through the St. Mary's River. If the quantity of flow be constant, a constant depth of water on the top edge of plank A will result. Now, if the barriers A , or 1 and 2 be removed, as in the first instance, then the level of water in the re-

ceptacle will, after a time, find a permanent elevation over the top edge of B just as it had over the top of A . Similarly, if the flow through the pipe be variable. The variable inflow would result in variable depths on A and variable levels in the receptacle, and the removal of the barrier A would simply result in a repetition of all these variations at a level a fixed and constant distance lower than occurred before the removal of the barrier; and that distance would be a constant no matter what the shape or nature of the barrier removed, provided always that the depth of water in the receptacle be great or be not sensibly changed.

The barrier restrains outflow from the receptacle, and the removal of it simply results, after a time, in a fixed lowering of water surface or lake level, variation of inflow or outflow being what it may. This may be regarded as a principle.

Diagram No. 5 serves to develop the matter to a conclusion.

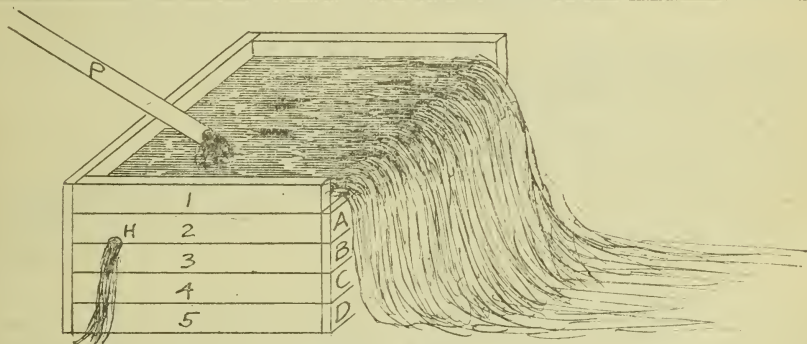


DIAGRAM NO. 5.

The inflow through the pipe and the outflow over A are represented. Neglect the outflow through the Hole H for the present. It will further simplify the illustration to consider A to be a weir of great length compared with the depth of water on it. Let the inflow be variable, as is the inflow to the several lakes. Variable flow will take place over A and variable depth will have existence thereon. The flow of water over the weir A may be computed by the familiar formula $Q = C.h^{\frac{3}{2}}.l$ in which Q is the discharge or flow in cubic feet per section, h the head or depth over the weir, l its length and $C = 3.3$ more or less.

Diagram No. 6 following represents

the formula graphically for a weir of given length.

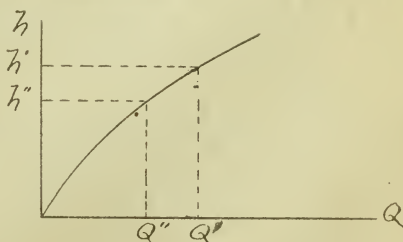


DIAGRAM NO. 6.

h' is the head corresponding to the flow Q' and $h-h'$ is the lowering of head corresponding to a change in discharge amounting to $Q'-Q$. Returning now to the water receptacle, and note the outflow through the Hole H . This outflow is caused by the removal of the barrier which formerly restrained water from flowing through the hole. Conceive the size of H to be so regulated that the outflow through it be constant, then it will permanently diminish the flow over A by a constant amount—say $Q'-Q$, and the corresponding permanent lowering of the water level in the receptacle will be $h'-h''$. The absolute magnitude of $h'-h''$ will depend on the magnitude of Q' , being smaller as Q' is greater. This is readily seen on examination of Diagram No. 6 above.

The Hole H finds its parallel in the Chicago Drainage Canal and the plank A in Niagara Falls or Niagara River or in the St. Clair and Detroit Rivers.

The curve in Diagram No. 6 is based on the flow over a weir and may be called the discharge curve of a weir. The numerical values determining the

curve depend on the values assigned to l and C in the weir formula. Its discussion has set forth all the principles involved in the determination under discussion.

The reservoir, instead of having a weir for a barrier, may have a rectangular channel of indefinite length. The variation of flow through the channel may be represented by a curve similar to that of a weir. The weir is so well understood that there can be no question as to the form of curve showing the variation of discharge over it. The same cannot be said of channels, and it is proper to discuss the form the curve may have. Before doing this it will be well to discuss analytically the change of depth that will take place in a channel when a given change of discharge or flow has taken place.

Suppose the barrier restraining and regulating outflow from a reservoir be a rectangular channel of uniform cross-section and indefinite length, as indicated in Diagram No. 7 in longitudinal section.

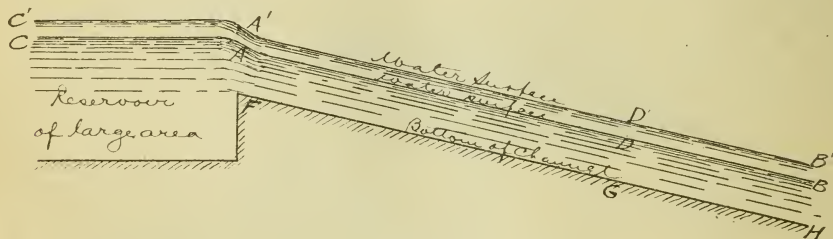


DIAGRAM NO. 7.

The inflow and outflow must be the same. At one time let it be such that the water surface is at CAB . At another time let it be such that the water surface is at $C'A'B'$. The difference in flow on these two occasions is $Q'-Q$, which may have such magnitude that DD' is one (1) foot. CC' will be larger than DD' by the head due to the difference in velocity in the channel on the two occasions.

It can be demonstrated that, so long as the depth of $DG = BH$ is constant that the value of $Q'-Q$ for a given value of Q will be essentially constant, no matter how wide the channel may be or what its slope may be; provided only that the width be in excess of say 500 feet and depth greater than say 5 feet, or less than, say, 60 feet.

The Kutter formula is generally accepted as stating correctly the variation of slope, hydraulic radius and velocity in uniform rectangular channels, and other channels of uniform cross-section, provided the size be not too great or too small. This formula certainly satisfies all authentic experimental data in such channels with satisfactory concordance. If a diagram (Diagram No. 8) be made in which ordinates be logarithm of hydraulic radius ($\log. r$) and abscissæ the ($\log. v - \frac{1}{2} \log. s$) logarithm of velocity minus one-half the logarithm of slope,* the Kutter formula may be represented, as shown, graphically thereon, one line for each value of " n " in the formula, if s in the co-efficient be constant or neglected, or one additional line as shown, for each volume of s should it be con-

sidered. Any other formula between the variables v , r and s may be represented on the diagram; also some one point on the diagram corresponds to the observed values of the variables in any particular experimental measurement of flow.

The equation of any straight line on the diagram is of the form $v = Cr^as^{\frac{1}{2}}$.*

An examination of the Diagram (No. 8) shows that, when the hydraulic radius exceeds, say, four (4) feet, and is not to vary more than one (1) foot, then in the case of any given channel the hydraulic formula may be written in the form

$v = Cr^as^{\frac{1}{2}}$ as well as in the form used by Kutter. The results of the two formulae will essentially agree. If the other formula be cast aside, it may likewise be said, as far as experimental data supports any formula that within the variation of one (1) foot in depth, the formula $v = Cr^as^{\frac{1}{2}}$ satisfies the experimental data.

The formula being $v = Cr^as^{\frac{1}{2}}$ the following results: Referring to the Diagram No. 7 the slopes $D'B'$ and DB are necessarily the same.

Let v , r , A (area), and Q refer to the one condition of flow and v' , r' , A' and Q' to the other. s , C , and a refer to both.

$$s^{\frac{1}{2}} = \frac{v}{Cr^a} = \frac{v'}{Cr'^a}$$

$$v' = \frac{vr'^a}{r^a}$$

(*NOTE:

$v = C \cdot r^a \cdot s^{\frac{1}{2}}$
 $\therefore \log. v = \log. c + a \log. r + \frac{1}{2} \log. s$
 $\log. v - \frac{1}{2} \log. s = a \log. r + \log. c$
 c and a are constants
 $\log. v$, $\log. s$, and $\log. r$ are variable and the usually observed quantities to be correlated.)

$$\therefore Q' = A'v' = A' \frac{v \cdot r'^a}{r^a}$$

$$v = \frac{Q}{A}$$

$$\therefore Q' = Q \frac{A' \cdot r'^a}{A \cdot r^a}$$

$$\therefore Q' - Q = Q \frac{A' \cdot r'^a}{A \cdot r^a} - Q$$

$$= Q \left\{ \frac{A' \cdot r'^a}{A \cdot r^a} - 1 \right\}$$

It is therefore demonstrated that the value of $Q' - Q$ is independent of the slope the channel may have or the value C may have, it being understood that whatever the slope may be, it is constant.

It is not evident from the formula that $Q' - Q$ for a given value of Q is essentially a constant for differing widths of channel but the tables to follow will demonstrate the fact.

The Diagram No. 8 does not definitely fix the value of " a ", the exponent of r , but enables limits to be placed thereon. For purposes of illustration lines are drawn on the diagram, as indicated representing the formula when " a " is both $\frac{1}{2}$ (as in the Chezy formula), and unity (1). It appears that, in case of any particular channel, its value must exceed $\frac{1}{2}$, the limitations as to size of channel hitherto stated being still contemplated.

Tables, as follows, have been prepared, with " a " equal to both $\frac{1}{2}$ and unity (1); and for widths ranging from 500 to 6000 feet; depths (d') varying from 5 to 50 feet; and Q' equal to 225,000 cubic feet per section. Diagrams Nos. 9 and 10 show the results of the tables graphically.

TABLE A.

Exponent of $r=a=\frac{1}{2}$.

W. WIDTH.	VALUE OF $Q'-Q$ FOR A CHANGE IN DEPTH FROM									
	5' to 4'	10' to 9'	15' to 14'	20' to 19'	25' to 24'	30' to 29'	35' to 34'	40' to 39'	45' to 44'	50' to 49'
500	88830	38016	21061	17544	13733	11315	9586	8306	7319	6536
1000	89136	38265	24290	17761	13979	11514	9779	8493	7500	6712
1500	89239	38380	24364	17837	14053	11586	9849	8561	7567	6778
2000	89291	38392	24409	17876	14091	11623	9 86	8597	7603	6813
3000	89343	38433	24450	17915	14130	11660	8923	8638	7639	6848
4000	89369	38457	24471	17985	14149	11679	9941	8652	7657	6866
6000	89396	38479	24491	17955	14168	11699	9960	8671	7675	6885

Exponent of $r=a=1$.

W. WIDTH.	VALUE OF $Q'-Q$ FOR A CHANGE IN DEPTH FROM									
	5' to 4'	10' to 9'	15' to 14'	20' to 19'	25' to 24'	30' to 29'	35' to 34'	40' to 39'	45' to 44'	50' to 49'
500	125184	51674	3 316	23355	18252	14925	12593	10870	9546	8496
1000	125866	52233	32789	23828	18676	15331	12984	11248	9911	8851
1500	126097	52412	32353	23984	18826	15476	13126	11387	10048	8935
2000	126213	52503	33037	24063	18902	15550	13200	11459	10118	9034
3000	126329	52587	33 20	24143	18981	15627	13275	11533	10191	9136
4000	126387	52639	33163	24184	19020	15666	13313	11570	10228	9163
6000	126446	52686	33205	24225	19060	15705	13351	11608	10266	9201

TABLE B.

Exponent of $r=a=1\frac{1}{2}$.

SURFACE WIDTH. W.	VALUE OF $Q'-Q$ FOR A CHANGE IN DEPTH FROM									
	5' to 4'	10' to 9'	15' to 14'	20' to 19'	25' to 24'	30' to 29'	35' to 34'	40' to 39'	45' to 44'	50' to 49'
500	1873	.....	.....	.....	.....
1000	19543	.....	.....	.....	.....	.....	.....	.....
1500	9873	.....	.....	.....	.....
2000	19332	.....	.....	9871	.....	.....	.....	.....
3000	19481	.....	.....	9866	.....	.....	.....	.....
4000	19474	.....	.....	9859	.....	.....	.....	.....
5000	19494	.....	.....	.....	.....	.....	.....	.....

Exponent of $r=a=1$.

SURFACE WIDTH. W.	VALUE OF $Q'-Q$ FOR A CHANGE IN DEPTH FROM									
	5' to 4'	10' to 9'	15' to 14'	20' to 19'	25' to 24'	30' to 29'	35' to 34'	40' to 39'	45' to 44'	50' to 49'
500
1000	24212	.....	.....	12278	.....	.....	.....	.....
1500
2000	24190	.....	.....	12289	.....	.....	.....	.....
3000	24100	.....	.....	12283	.....	.....	.....	.....
4000	24075	.....	.....	12274	.....	.....	.....	.....
5000	24134	.....	.....	12265	.....	.....	.....	.....

DIAGRAM NO. 9

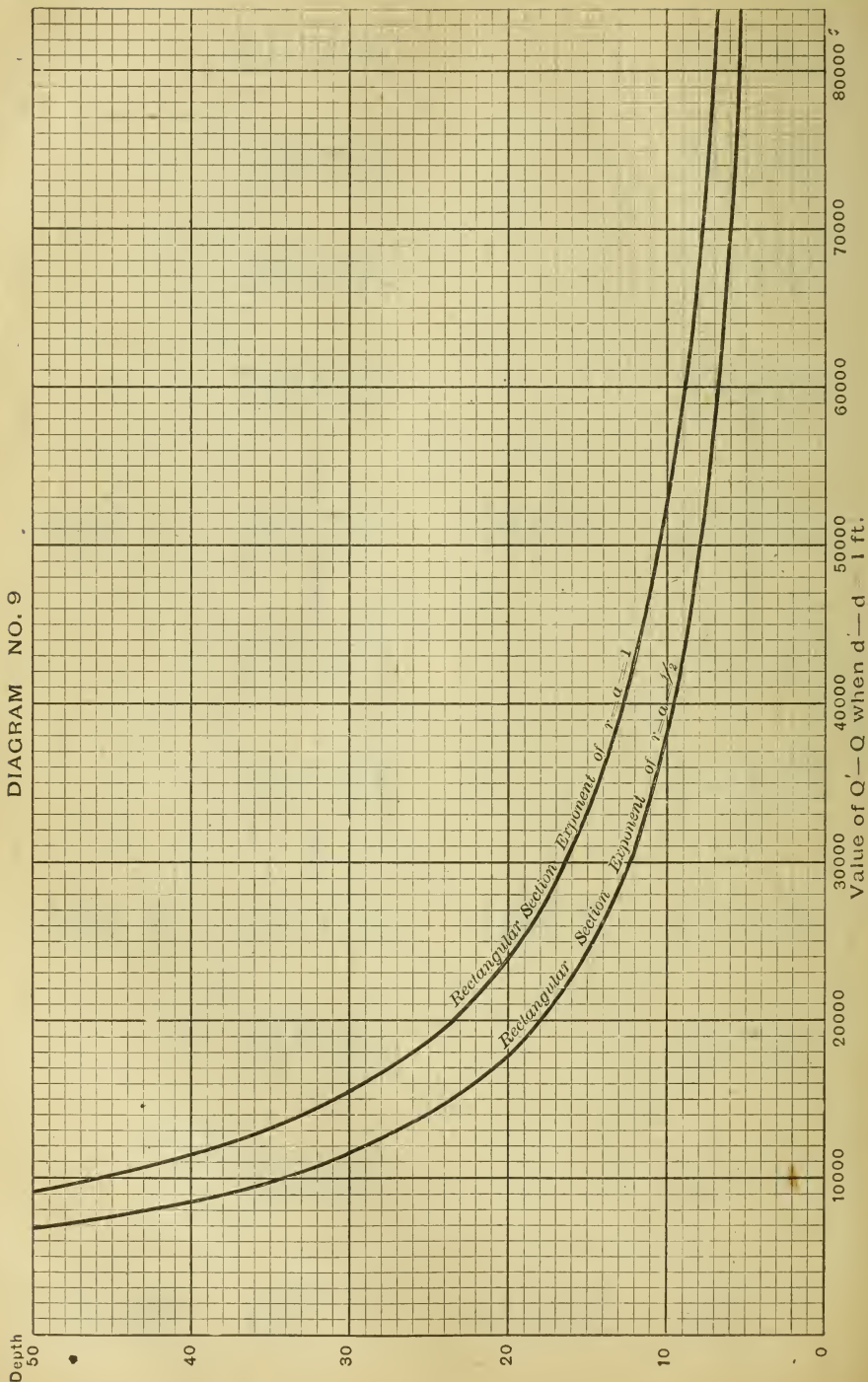


DIAGRAM NO. 10.

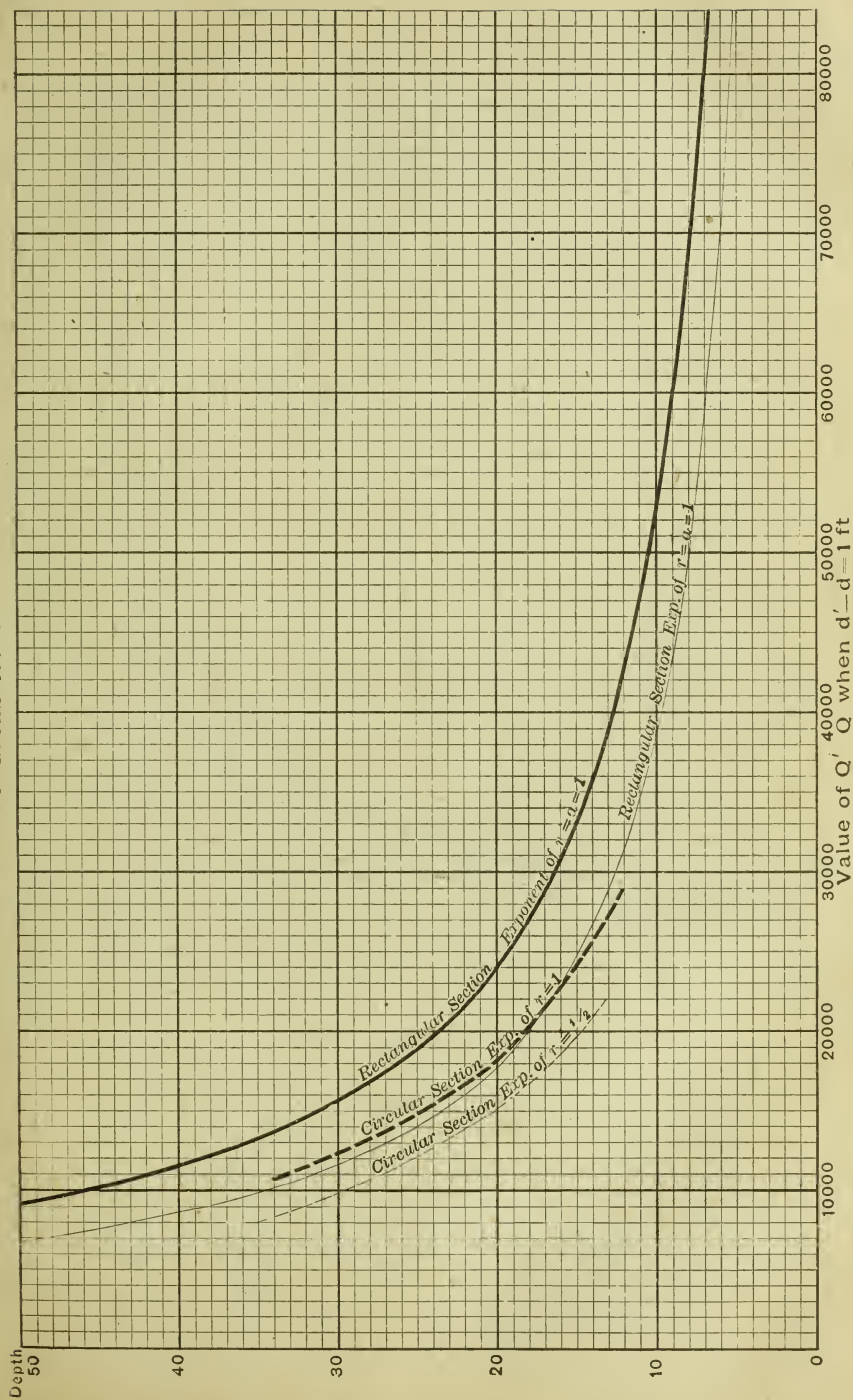
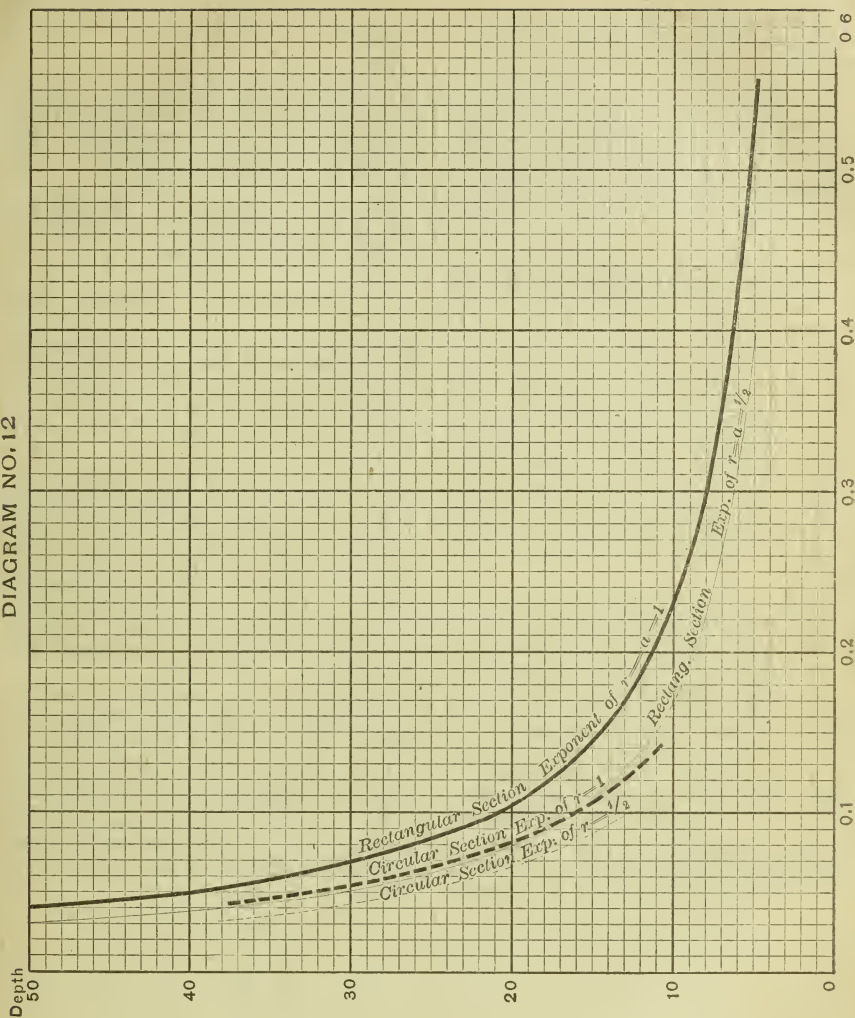


DIAGRAM NO. 11



DIAGRAM NO. 12



The first table (Table A) is based on a rectangular cross-section and is shown graphically on Diagram No. 9.

The second table (Table B) is based on an arc of a circle for bottom of cross-section and is shown graphically on Diagram No. 10. Q is made equal to 225,000 because the mean value of discharge in the St. Clair river is believed to be about that magnitude.

Diagrams 11 and 12 show graphically the co-efficients of Q in the formula for both rectangular and circular arc cross-sections.

The results for both forms of cross-sections are practically the same. This being the case it follows that the value of $Q' - Q$ for a given value of Q depends solely on the mean depth of any section and has the same value regardless of the shape of the cross section, except that it is larger for rougher than for smooth sections in such measure as the value of " a " is increased, as shown on the diagrams.

Given, a channel of varying width and varying shape of cross-section but let its mean depth from section to section be constant. Then whatever its slope may be, or whatever the widths may be, the value of $Q' - Q$ for a given value of Q will be the same, and the absolute value of that magnitude will depend simply on the value of " a ". This conclusion is based on the showing of the logarithmic Diagram No. 8 by which it was proved that the formula $v = C' r a s^{\frac{1}{2}}$ would with sufficient correctness represent the variation of these variables while any change

of one foot, more or less, was made in depth.

It will be observed that the value of $Q' - Q$ for a given value of Q is essentially constant in the case of any particular channel, without regard to width or slope, and that its magnitude is larger as " a " is given larger values.

It is to be observed that the value of $Q' - Q$ will be larger or less as the following conditions obtain:

Larger as the ratio $\frac{r}{r'}$ increases. Suppose a channel of width " w " and area A' be bounded in one instance with vertical sides and horizontal bottom, and in the other instance by an arc of a circle. In the latter case the value of $Q' - Q$ will be slightly less.

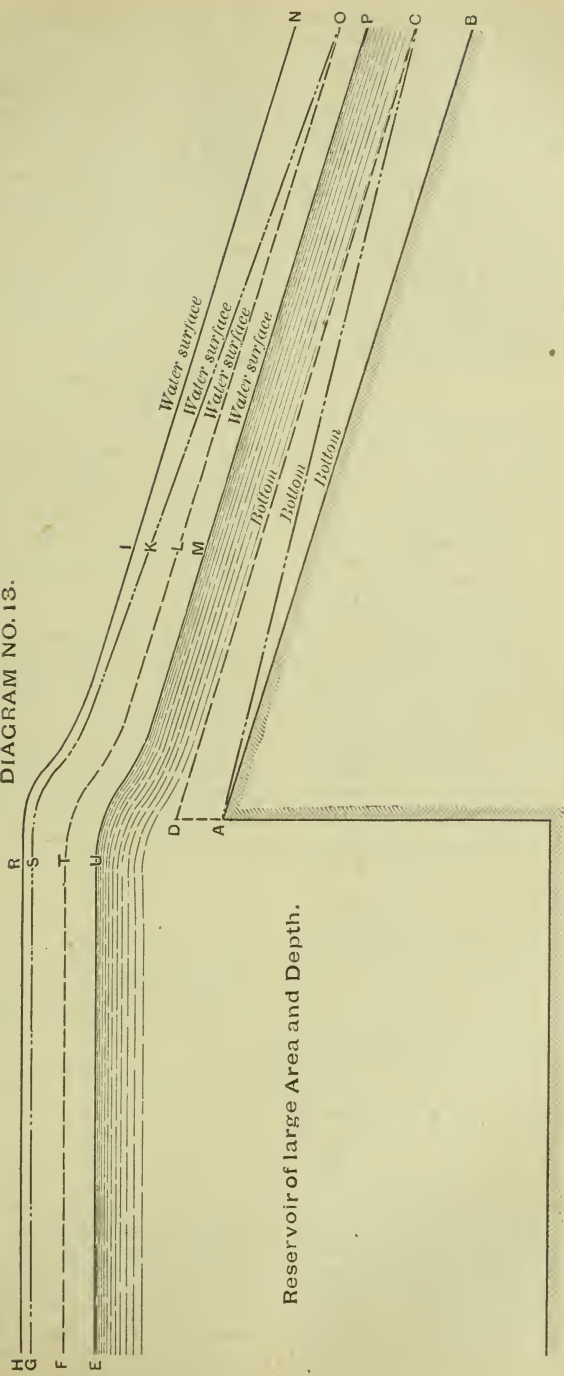
Larger as the sides of the channel are rougher and more irregular, for it will be seen on Diagram No. 8 that the value of " a " in the formula will be nearer unity (1) as the channel is rougher and more irregular. It is not improbable that in a wide, boulder bound channel, of shallow depth, its value may, for some range in value of r , be larger than unity (1).

Larger, if by any chance the slope in the channel (illustrated further on) should be larger for Q' than for Q .

Less, if by any chance the slope in the channel should be less for Q' than for Q .

The foundation for expanding this discussion so as to apply to irregular channels leading from the reservoir has been laid.

DIAGRAM NO. 13.



Reservoir of large Area and Depth.

First—Consider a uniform rectangular channel with bottom AB and water surface MP and depth PB (Diagram 13) of any width.

Second—A uniform rectangular channel with bottom DC and its width so adjusted that its water surface will also be MP .

Third—Suppose the inflow and outflow from the reservoir to be increased by a stated amount, 10,000 cubic feet per section, for instance. Then, from inspection of the tables, it is evident that the water surface in the more shallow channel will be raised to LO , a lesser amount than will be the case for the deeper channel, the water surface for which will be IN .

Fourth—Suppose now that the outlet channel have its bottom as shown by AC and, proceeding from the reservoir, to have increasing width equal at the head of the channel to the width under the head "First" above, and a width at O equal to the width under the head "Second" above. The tendency at the extremities of the channel will be as flow increases, to cause differing elevations of water surface to the end that the slope will take some shape as illustrated by KO . That is, a steeper slope will obtain in the channel which will in turn reduce the water surface from R to S . In other words, the change of water surface in the reservoir will be less than would be the case if the deeper channel of uniform cross-section had existence. Proceeding from Lake Huron to Lake Erie a chan-

nel having this general cross-section actually exists.

It is evident that for any reservoir having an outlet of diminishing hydraulic radius, proceeding from the reservoir, the value of $Q' - Q$ for a given value of Q will have larger values at and near the head of the outlet than would be the case with a uniform rectangular channel having the larger hydraulic radius.

It is also evident that all these tendencies would exist if the channel, under the heads "First" and "Second" were of irregular width, excepting that, in general, the irregularities would tend to increase " a " in the formula and correspondingly increase the value of $Q' - Q$ that would have existence.

The conclusion is that the value of $Q' - Q$ increases above the values in the tables in a channel having increasing slopes and diminishes in a channel having diminishing slopes. The percentage of increase or decrease of velocity and discharge will be approximately one-half ($\frac{1}{2}$) the percentage of increase or decrease of slope.

What has been said for a rectangular channel applies equally well to any form of Channel. Mean depth, slope and the value of " a " are the ruling quantities, as already shown.

Consider a channel the mean depth of which varies from section to section, but in some such manner as indicated on the following Diagram No. 14.

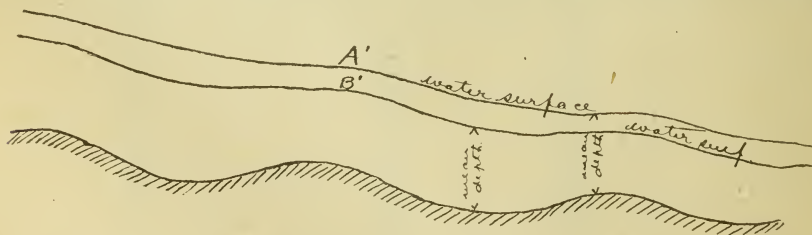


DIAGRAM No. 14.

Let the water surface rise from B' to A' . Suppose the total fall of water surface to remain unchanged. Then the value of $Q' - Q$ must be that corresponding to some mean depth intermediate between the maximum and minimum. The average mean depth—the volume of the water prism divided by the area of its surface—may be taken as the proper one. Apply-

ing the reasoning to the St. Clair and Detroit Rivers, then the value of $Q' - Q$ may be taken from the diagrams illustrating the tables before described, the only uncertainty being as to the value of " a ." Suppose " a " to be unity and the mean depth 20 feet. Then $Q' - Q$ will equal something greater than 20,000 cubic feet per second.

This analytical discussion is believed to be in the proper line for a determination of the matter in hand, but should be supplemented by more complete data for the preparation of which there is not now sufficient time. It has been developed far enough, however, to dissipate the wild ideas that the Chicago Drainage Canal will, when flowing 10,000 cubic feet per second, lower the lakes anything like a foot. Considered in connection with the Niagara discharge observations, the change of level for this flow is narrowed to less than half a foot, and the change due to 5,000 cubic feet per second to less than three inches.

This discussion also serves to demonstrate certain features of the discharge curves in the rivers connecting the lakes, as elsewhere stated.

The form of discharge curve in an open channel may now be discussed. The case of a rectangular channel of indefinite length may be considered first. Slope therein is necessarily a constant. Width of channel may, as previously, be between limits 500 and 6,000 feet, and depth between 5 and 60 feet.

Slope being constant, the logarithmic diagram (No. 8) shows that the equation $v = C'r a s^{\frac{1}{2}}$ will apply to the channel, though " a " may be variable. " s " being constant it makes no difference whether its exponent should be one thing or another, providing it be constant. In channels of the size considered, the equation for area is practically $A = C'r$, since r essentially equals mean depth. The equation for discharge may therefore be written

$Q = AC'r a s^{\frac{1}{2}} = CC'r a^{\frac{1}{2}} s^{\frac{1}{2}}$. Or, since slope is constant, $Q = K r a^{\frac{1}{2}}$, K being a constant and equal to $CC's^{\frac{1}{2}}$. This equation for discharge is similar to that for a weir and has a form as shown on the following Diagram No. 15:

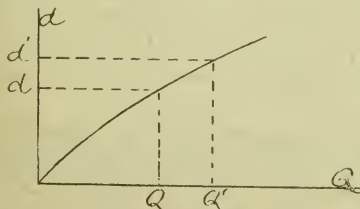


DIAGRAM NO. 15.

Note— d =mean depth and for all practical purposes may be used instead of r .

It is to be noted that this curve is convex toward the axis of D . The reverse is the case with the discharge curve of the South Branch of the Chicago River measured in 1892. The increase of depth is simply increase of fall of water surface in four miles of river from Bridgeport to Lake street, the hydraulic radius varying comparatively little. See Diagram No. 16.

The value of $Q' - Q$ increases with depth.

Assume that " a " in one instance equals $\frac{1}{2}$ and in another instance unity (1), then the curves for the two cases will be illustrated on the following Diagram No. 17:

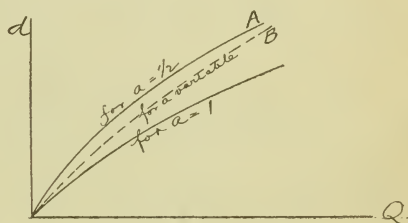


DIAGRAM NO. 17.

Should the value of " a " be variable and diminish gradually from 1 to $\frac{1}{2}$, the curve will be as shown, and it is easy to see how it will be if the value of " a " increase from $\frac{1}{2}$ to 1. Experiment indicates, however, that " a " will always be a diminishing quantity as depth increases. (See Ganguillet & Kutter collection of experimental data, translated by Hering.)

In any event, $Q' - Q$ must always be an increasing quantity (slope being constant) as d increases, unless " a " = 0 or a minus quantity, the former value being absurd and the latter contrary to any experience in channels as well defined as those connecting the lakes.

The above has been applied to a rectangular channel, but the previous discussion of $Q' - Q$ shows that it will apply to any channel where mean depth is constant.

Consider next the case shown on Diagram No. 14, where the channel has variable mean depth and variable width, but constant total fall of water surface. The curves would be of the same form as for channels of uniform depth and cross-section, but the origin of discharge would not correspond to the zero of depth. The equation would be of the form $Q = C f (r^{a+1})$.

The preceding discussion has shown the form of discharge curve for any shape of channel, providing slope be constant. Should slope increase as the water rises, the discharge at the greater depth will be greater than would be the case with constant slope. If it be true that slope (s) should have exponent $\frac{1}{2}$ in the formula, then if r be constant and s alone vary, the form of curve will be as in the following Diagram No. 18:

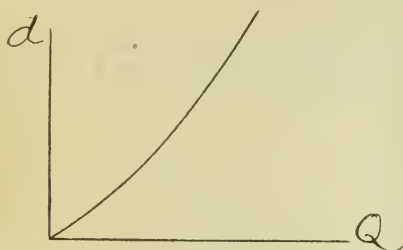


DIAGRAM No. 18.

NOTE--

$$Q = Ks^{\frac{1}{2}}$$

$$K = \text{constant} = C A r^a$$

This, as already stated, is similar to the curve for South Branch of Chicago River, Diagram No. 16, referred to above, which bears out the conclusion that the exponent of s should be essentially $\frac{1}{2}$.

On the following Diagram No. 19 two curves are shown, the one for varying s and the other for constant s .

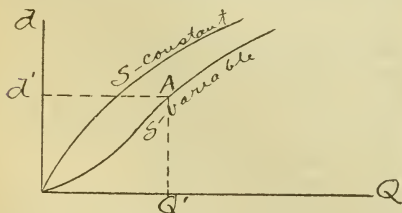


DIAGRAM No. 19.

The former is illustrated by the discharge curves in the Desplaines River at Riverside and the Illinois River at Morris, Diagrams No. 20 and No. 21, that part of the Morris curve determined below overflow being considered.

It is clear that the form of curve may be more or less sinuous, but that, unless slope diminishes, the discharge must increase as depth increases, though, if slope increases at a suitable rate the dis-

charge may likewise increase at a diminishing rate. Such is the mechanical and experimental conclusion.

There is one phase of experimental discharge curves worthy of mention and illustrated to a certain degree by the Morris curve, Diagram No. 21. After overflow took place the discharge in the main river increased at a diminished rate, though the total discharge of the river increased at an increasing rate. Similar results have been obtained at various points in the Mississippi and its tributaries as shown by reports of the Chief of Engineers, U. S. A. It is highly probable that in such cases, while the depth is increasing from the point of overflow to high water level, the value of " a " may be negative, but there is no experience to indicate that such would be the case in the rivers connecting the lakes, while a change of four or five feet in depth took place. In the case of the Morris curve it is highly probable that the variation in question was due to varying slope.

The direct treatment of the problem in hand depends, of course, on the discharge curve in the rivers connecting the lakes, unless the analytical method herein described may be considered a direct method.

The only data promising an approximation to such a curve are those obtained in 1890-91 in the Niagara River under the direction of Maj. Ruffner, Corps Engrs. U. S. A. These are fully described in the report of the Chief of Engineers U. S. A. for 1893, page 4364. Diagram No. 22 accompanying shows them graphically, the gauge (which is the same as depth) being ordinates, and the discharge (Q) being abscissæ. Major Ruffner's report indicates that slope increases with depth within the range of depth covered by the observations, which accounts for the apparent convexity of the curve toward the axis of discharge, as is the case for the South Branch of the Chicago River (Diagram No. 16). However, as in the case of the Morris curve (Diagram No. 21) this convexity is not necessarily represented by a parabolic curve.

It may be noted that the observations made in Niagara River, which were all below mean lake level, give no clue whatever as to the form or shape of the curve above mean lake level. This is more evident after considering Diagram No. 19.

Quite a number of curves may be drawn on the diagram indicating the

mean discharge of given depths, one of which is as shown. This curve indicates what is highly probable and in conformity with the increasing slope, viz.: That at low stages of Lake Erie, the change of level for a change of outflow amounting to 10,000 cubic feet per section is about three inches, or one and one-half ($1\frac{1}{2}$) inches for the amount which will, for some years at least, be taken by the Chicago Drainage Canal. At midstage of the lake it appears that the change of level will be somewhat more, but the change is not of so much consequence at the higher as at the lower stages.

The changes of level in the river, however, are somewhat less than in the lake at Buffalo, on account of the increasing slope. Essentially simultaneous gauge readings at Buffalo and in the river where the flow was measured are reported by Major Ruffner. They are shown on Diagram No. 23. There are evidently several accidental observations in the lot, which being ignored, permits the establishment of the line *A B* which expresses the relation between the changes of level in the river at Buffalo. Numerically, the level of the lake changes 25 per cent more than the level of the river where the flow was measured. This gauge relation is, as shown, a straight line, which conforms to experience elsewhere.

The change of level probable in Lake Erie is fixed by the Niagara River. The charts showing variation in lake levels (Diagram Nos. 1 and 2) indicate that the rise and fall of Lakes Huron and Erie are about the same and, therefore, that a given change of flow through the connecting rivers will produce the same change of level in both lakes, except in so far as the flow through Niagara River is larger than the flow through the Detroit River. That is, the change of level in Huron and Michigan for a given change of flow will be 15 per cent, more or less, greater than the change in Erie.

(Signed) THOS. T. JOHNSTON,
Assistant Chief Engineer."

COMMUNICATION ON ROMEO ROAD CROSS-
ING OF MAIN CHANNEL.

The Clerk presented a communication, addressed to President Wenter, from

Norton & Co., Lockport, Illinois, with reference to the bridging of the Romeo Road crossing of the Main Channel, as set forth in the communication; and the communication was read.

Mr. Eckhart, seconded by Mr. Kelly, moved that the communication be ordered printed and referred to Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the communication was ordered printed and so referred.

The following is

THE COMMUNICATION:

"LOCKPORT, Ills., June 27, 1895.

*To the Hon. Frank Wenter, President
Board of Trustees, Sanitary District,
Chicago, Ill.:*

DEAR SIR—The condition of the public highway, crossing the Canal at Romeo, is proving quite a loss to us. Farmers who formerly hauled their grain to us are now taking it elsewhere, and claim they will not come back to Romeo until the Channel is properly bridged. As nearly as we can ascertain we have lost in past six months from this cause about \$2,000.

We understand from the Highway Commissioners of the Town of DuPage, that the District has agreed to have the Channel properly bridged by August 1st. We wish to urge upon your Board the importance of doing this work at as early a date as possible.

A new crop of oats will commence coming in last of July, and a few more weeks of delay can easily cause us a further loss of two or three thousand dollars.

Very truly yours,

(Signed) NORTON & Co.
By W. G. NORTON."

ADJOURNMENT.

On motion of Mr. Eckhart, seconded by Mr. Kelly, the Board then adjourned.

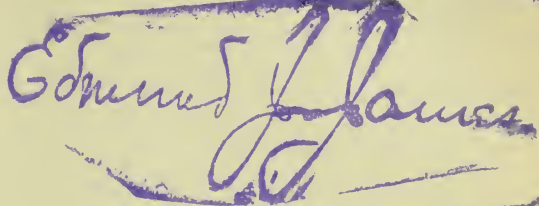
THOS. F. JUDGE,
Clerk.

July 2,]

—2728—

[1895.





PROCEEDINGS

—OF THE—

BOARD OF TRUSTEES

—OF THE—

SANITARY DISTRICT OF CHICAGO.

JULY 10, 1895.

OFFICIAL RECORD.

(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)

REGULAR MEETING.

The two hundred and seventy-seventh regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, July 10, 1895, at 2:00 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Bolden-

weck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7), and subsequently Mr. Gilmore, making a total of eight (8) members, were present.

MINUTES.

The minutes of the regular meeting held June 26, 1895, were approved as printed, on motion of Mr. Russell, seconded by Mr. Boldenweck.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

CLAUSE "J"

Construction Account—

Griffiths & McDermott, (Sec. 1, July 1, 1895).....	\$ 13,238 82
McArthur Brothers, (Sec. 2, July 1, 1895),	20,842 50
Gilman & Company, (Sec. 3, July 1, 1895)	25,007 50
McArthur Brothers, (Sec. 4, July 1, 1895)	27,498 63

Total Retained.	Amount released on this Voucher.
\$14,061 75	\$ 263 68
2,842 00	1,813 00

		CLAUSE "J"	
		Total Retained.	Amount released on this Voucher
The Qualey Construction Co., (Sec. 5, July 1, 1895).....	\$23,474 50	\$7,641 00	\$ 243 00
Mason, Hoge & Company, (Sec. 6, July 1, 1895).....	16,189 68	2,268 00	108 00
Mason, Hoge & Company, (Sec. 7, July 1, 1895).....	18,813 38		
Mason, Hoge, King & Co., (Sec. 8, July 1, 1895).....	16,789 50		
Halvorson, Richards & Co., (Sec. 9, July 1, 1895).....	16,821 87		
E. D. Smith & Co., (Sec. 10, July 1, 1895)	11,060 00		
Mason, Hoge & Company, (Sec. 11, July 1, 1895).....	12,343 19		
Mason, Hoge & Company, (Sec. 12, July 1, 1895).....	16,573 16		
Mason, Hoge & Company, (Sec. 13, July 1, 1895).....	9,840 91		
Smith & Ernstman, (Sec. 14, July 1, 1895)	14,308 00		
Wright, Meysenburg, Sinclair & Carry, (Sec. 15, July 1, 1895).....	14,554 75		
Heldmaier & Neu, (Sec. A, July 1, 1895)	4,327 43	26,171 21	423 00
Heldmaier & Neu, (Sec. B, July 1, 1895)	10,631 96	13,080 42	1,103 76
Western Dredging & Improvement Co., (Sec. C, July 1, 1895).....	10,877 57		
E. D. Smith & Co., (Sec. D, July 1, 1895)	5,274 28		
Angus & Gindele, (Sec. E, July 1, 1895)	7,959 26	3,591 00	
Weir, McKechney & Co., (Sec. F, July 1, 1895).....	3,278 19		
Gahan & Byrne, (Sec. G, July 1, 1895)...	6,432 23	10,808 00	
Gahan & Byrne, (Sec. H, July 1, 1895)...	5,950 69	5,684 00	
Christie & Lowe, (Sec. I, July 1, 1895)...	6,690 47	500 00	300 00
Christie & Lowe, (Sec. K, July 1, 1895)...	9,537 50	2,775 00	700 00
The Heidenreich Company, (Sec. L, July 1, 1895).....	9,465 11	5,848 93	2,036 98
The Heidenreich Company, (Sec. M, July 1, 1895).....	2,012 68	4,014 50	533 82
Hayes Bros. et al., (Sec. N, July 1, 1895)	923 74	1,757 20	
S. T. Hart, (Sec. 1, Extra work—Removal of dam opposite Columbia Park, final, July 1, 1895).....	210 00		
Mason, Hoge & Co., (Sec. 6, Extra—Special work, retaining embankment, repairing and raising levee, July 1, 1895).....	1,320 00		
Mason, Hoge & Co., (Sec. 7, Extra work—Dimension stone, rip-rap work, earth core and embankment, July 1, 1895)	612 00		
Total.....		\$342,859 50	

ENGINEERING DEPARTMENT.

Cameron, Amberg & Co., (stationery)...	\$ 4 30
Keuffel & Esser Co., (drafting supplies)	12 69
Chicago Blue Print Paper Co., (paper).	2 88
F. Mayer & Co., (blue prints).....	49 06

W. A. Olmsted, (mounting maps).....	\$ 8 50	
Morrison, Plummer & Co., (paints, etc.)	5 51	
Alfred L. Robbins Co., (cement tubes)..	4 75	
Dennison Mnfg. Co., (tags).....	5 50	
Fuller & Fuller Co., (photo supplies)....	2 05	
Walmsley, Fuller & Co., (photo supplies)	18 52	
John McCaffery, (rent—Brighton Park, June, 1895)	25 00	
Frank S. Amick, Agent, (rent—Corwith, June, 1895).....	15 00	
J. M. Abbitt, (rent—Willow Springs, June, 1895).....	20 00	
H. S. Norton, (rent, Lemont, June, 1895)	18 00	
O. W. Moon, (rent—Lockport, June, 1895).....	20 00	
Mary Rusk, (gauge reading, June, 1895)	10 00	
E. Hastings, (gauge reading, June, 1895).....	10 00	
Wm. Kirkham, (gauge reading, June, 1895).....	10 00	
Wm. McGinnis, (gauge reading, June, 1895).....	10 00	
C. B. Brainard, (gauge reading, June, 1895).....	10 00	
Chicago Edison Co., (repairs).....	1 19	
Chicago Towel Supply Co., (toweling)..	5 40	
C. S. Austin, (ice).....	12 00	
Isham Randolph, (traveling).....	114 60	
E. R. Shnable, (traveling).....	38 73	
H. B. Alexander. (traveling).....	24 94	
Chas. L. Harrison, (traveling).....	51 75	
Wm. Trinkaus, (expense).....	30 54	
		\$ 540 91

CLERICAL DEPARTMENT.

C. S. Austin, (ice).....	\$ 3 00	
Warner's Towel Supply, (toweling).....	2 00	
		\$ 5 00

LAW DEPARTMENT.

Jacobs, Coles & Co. (stationery).....	\$ 2 75	
Stromberg, Allen & Co., (stationery)....	7 00	
<i>Chicago Daily Law Bulletin</i> , (subscription).....	3 00	
C. S. Austin, (ice).....	3 00	
Warner's Towel Supply, (toweling).....	1 50	
Wagner Bros. (livery).....	8 50	
Geo. E. Dawson, (expense—expert witnesses).	529 38	
		\$ 555 13

GENERAL ACCOUNT.

Wagner Bros. (livery).....	\$ 3 00
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POLICE DEPARTMENT.

Z. R. Carter & Bro. (hay).....	\$ 81 11
Hibbard, Spencer, Bartlett & Co. (lamp chimneys).....	4 20
Marshall Field & Co. (sheets and slips).	13 45

H. R. Eagle & Co. (soap).....	\$ 6 25
McArthur Brothers Company, (horse shoeing).....	21 78
Thos. Ludwig, (horse shoeing).....	6 80
J. H. Tedens & Co. (sundries).....	52 99
Wagner Bros. (livery and feed).....	38 25
	<hr/>
	\$ 224 83
Grand total.....	<hr/>
	\$344,188 37

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly (*except as to vouchers for Mary Rusk, E. Hastings, Wm. Kirkham, Wm. McGinnis and C. B. Brainard, \$10.00 each for gauge reading, on which he voted "no,"*); Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

REQUISITIONS.

The Clerk presented the following requisitions:

No. 523, Engineering Department, (sundries).....	\$ 287 40
No. 938, Police Department, (sundries).....	28 00
No. 939, Police Department, (surgical supplies).....	18 00
No. 1063, Clerical Department, (stationery).....	41 50
Total.....	<hr/>
	\$374 90

Mr. Kelly, seconded by Mr. Eckhart, moved that Requisitions No. 523 for the Engineering Department, Nos. 938 and 939 for the Police Department and No. 1063 for the Clerical Department, as read and shown above, be referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the Requisitions, as read and shown above, were so referred.

WEEKLY REPORT ON EMPLOYES.

The Clerk presented a report, in accordance with the Rules, showing the number of persons in the employ of the District for the weeks ending June 29 and July 6, 1895.

The same was read, and, by unanimous

consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, July 10, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the weeks ending June 29 and July 6, 1895, as the same have been reported to me:

	WEEKS ENDING	
	June 29, 1895.	July 6, 1895.
Engineering Dept.....	164	165
Clerical Dept.....	4	4
Law Dept.....	7	7
Treasury Dept.....	1	1
Police Dept.....	48	48
Telephone Operator.....	1	1
Towpath Force.....	2	2
Total employes.....	<hr/>	<hr/>
	227	228

Respectfully submitted,

(Signed)

THOS. F. JUDGE,

Clerk."

SEMI-ANNUAL PROPERTY RETURN FROM ENGINEERING DEPARTMENT.

The Clerk presented a report from the Chief Engineer, transmitting the semi-annual property return from the Engineering Department, for the half year ending June 30, 1895.

The report was read, and, by unanimous consent, was ordered printed and, with accompanying property return, placed on file.

The following is

THE REPORT:

"CHICAGO, July 8, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—I herewith transmit the property return of the Engineering Department for the half year ending June 30, 1895.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

(Accompanied by semi annual property return.)

TEMPORARY BRIDGE TRESTLES AT ROMEO
AND LEMONT ROADWAY CROSSINGS.

The Clerk presented a report from the Chief Engineer, asking authority to put in temporary bridge trestles at the Romeo and Lemont roadway crossings of the Main Channel, at a cost not exceeding \$1,100 each, exclusive of approaches, as set forth in the report; and the report was read.

Mr. Kelly seconded by Mr. Boldenweck, moved that the report be ordered printed and placed on file, and the authority to put in temporary trestles as requested therein granted.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed and placed on file, and the authority to put in temporary trestles as requested, therein granted.

The following is

THE REPORT:

"CHICAGO, July 9, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—The channel having been excavated across the roadways at Romeo and Lemont and said roadways having been diverted temporarily to permit of this being done it is necessary that these roads should be restored as nearly as may be to the original line, and inasmuch as it will be several months before permanent bridges can be constructed, I ask that I be authorized to put in trestles for the channel crossings at each place. The cost of the trestles will be about \$1,100

each. The grading for the approaches will be additional to this but it can be made as a part of the permanent work of the bridge approaches.

With your consent I will purchase the lumber in the market here and arrange for framing and placing the trestles upon the best terms I can make.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

MOVING OF CABLEWAY ON SECTION 8 AT
SANTA FE TRACKS

The Clerk presented a report from the Chief Engineer, asking authority to move the cableway on Section 8 at the Santa Fe tracks at an expense not to exceed \$1,600, as provided in the report; and the report was read.

Mr. Boldenweck, seconded by Mr. Kelly, moved that the report be ordered printed and placed on file, and the authority to move cableway as requested therein granted.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Kelly, Russell and Wenter—six (6). Excused and not voting—Messrs. Eckhart and Gilmore—two (2). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed and placed on file, and the authority to move cableway as requested therein granted.

The following is

THE REPORT:

"CHICAGO, July 9, 1895.

*To the Honorable the Board of Trustees of
the Sanitary District of Chicago:*

GENTLEMEN—The excavation of the work on Section 8 has approached as closely to the Santa Fe Railroad track as is practicable, and it is necessary either to change that track to admit of further excavation or transfer one of the cableways from the southerly to the northerly side of said track. The latter expedient is the least costly and can be most quickly accomplished. This cableway can be moved across for \$1,600 and probably less. I therefore ask that I be authorized to arrange for having it moved to enable the contractors to proceed with their work on the northerly side of said railroad.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

DELINQUENCY OF WORK ON SECTION E.

The Clerk presented a report from the Chief Engineer, with reference to the delinquency of the work of Angus & Gindele, contractors on Section E of the Main Channel; and the report was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the report be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the report was ordered printed and so referred.

The following is

THE REPORT:

"CHICAGO, July 5, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—On September 19, 1894, the contract for completing the unfinished work on Section E was awarded to Angus & Gindele. The contract provided that progress should date from October 1st of that year. The rate of monthly progress figured from that date to April 30th, 1896, on the basis of the estimates used for the reletting, would have been \$21,151.58, which, reduced to yardage at 27 cents per cubic yard, would give 78,339 cubic yards nearly. Nine months of progress have elapsed and 705,051 cubic yards should have been excavated, whereas but 218,000 cubic yards, or 30.92 per cent nearly has been accomplished. To complete the work in ten months, the unexpired term of the contract, will require a monthly output of \$33,902.00 in value, or a glacial drift output of 125,563 cubic yards per month. The greatest output yet accomplished by these contractors was for the month of June, 62,300 cubic yards.

Their contract called for the completion of the outer levee by August 1st of this year. Up to this time there has been no visible preparation for this levee work, although I have called the attention of the contractors to it by letter and in personal interviews.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

MONTHLY REPORT FROM TREASURY DEPARTMENT.

The Clerk presented a report from the Treasury Department for the month of June, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT :

"Balance on hand at date of last report.....	\$3,380,457.39
Received from Thos. F. Judge, Clerk—Account Law Department—Land Account—Sale of "Allen" ice house to E. P. Whelan.....	\$ 175.00
Received from County Treasurer, Sanitary District Tax Account.	100,000.00
Received from National Bank of Illinois, interest for June	1,000.24
Received from American Trust and Savings Bank, interest for June.....	34.51
Received from Globe National Bank, interest for June.....	1,073.85
Received from Metropolitan National Bank, interest for June.....	1,013.15
Received from Chicago National Bank, interest for June.....	1,050.00
Received from Ft. Dearborn National Bank, interest for June.....	1,038.80
	<hr/> \$105,385.55
Total cash received for month.....	\$3,485,842.94
Total cash disbursed during month as per annexed schedules, viz:	
Clerical Department....	\$ 900.42
Treasury Department..	166.66
Engineering Department.	15,973.85
Engineering—Construction—Department.....	515,693.09
Law Department.....	3,104.71
Police Department.....	3,860.75
Law Department—Land Account.....	2,797.75
General Account.....	3,268.60
Bond Interest and Premium Account.....	371,250.00
	<hr/> \$917,012.83
Balance this date, in banks as per schedule endorsed hereon	\$2,568,830.11

(Signed) MELVILLE E. STONE,
Treasurer.

CHICAGO, June 30, 1895."

SCHEDULE:

Fort Dearborn National Bank.....	\$476,122.08
National Bank of Illinois.....	476,962.61
Chicago National Bank.....	475,638.08
Metropolitan National Bank.....	453,859.95
American Trust and Savings Bank.....	21,003.79
Globe National Bank.....	665,243.60

Total.....\$2,568,830.11

MONTHLY REPORT FROM LAW DEPARTMENT.

The Clerk presented a report from the Law Department for the month of June, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, July 10th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I submit herewith the monthly report for June, 1895.

The total amount paid out by this Department during the month is as follows:

SALARIES.

Attorneys.....	\$1,366 65
Office force.....	255 00
	<hr/> \$1,621 65

GENERAL EXPENSES.

Court costs.	\$1,265 70
Right of way.....	461 00
Expense account...	646 91
Printing and stationery	14 61
Sundries.....	2 00
	<hr/> \$2,390 23

LAND ACCOUNT.

Will County Taxes,	\$107 75
Total.....	<hr/> \$4,119 62

In the suit brought to restrain the collection of taxes on lands owned by the District in Will County, a hearing was had and an injunction issued restraining further proceedings by the County Treasurer to enforce collection until a final hearing of the case can be had.

A final order of judgment was entered in the suit of the District vs. Carl Moll, et al., awarding the owners of the land the

sum of \$38,621.45 with interest from June 29th, 1895, at the rate of five per cent until the payment of the award into the Joliet National Bank, as provided by the decree.

An appeal has been taken by the defendant to the Supreme Court.

A preliminary hearing was had to settle the question of title to lands west of the Bracken Bank on Sag Island not heretofore acquired, and an order finding ownership has been entered.

Suit has been brought against the District by Smith & Eastman for work alleged to have been done by them on Section fourteen (14).

The District has also been made a defendant in a suit brought by Michael Guilford for money claimed to be due for services performed on contract Section eight (8), awarded to Agnew & Company, the contract for which work was subsequently assigned, with the consent of the District, to Mason, Hoge, King & Company.

Conferences have been had with the officials of the Illinois Central and the Pittsburg, Cincinnati & St. Louis Railroad Companies and satisfactory agreements for railroad crossings are in a fair way to be reached at an early date.

The preparation of the pleadings in the new suit begun against the District, further attention to the matter of street and railway crossings, and routine work will occupy the attention of the Department during the coming month.

Respectfully submitted,

(Signed)

GEO. E. DAWSON,

Attorney."

REPORT ON POWERS OF DISTRICT FOR PRESERVATION OF PUBLIC ORDER IN DISTRICT POLICE LIMITS.

The Clerk presented a report from the Attorney, with reference to the powers of the District for the preservation of public order in District police limits, prepared in response to an order passed at the meeting held July 2, 1895, (pages 2695-6 of the Proceedings); and the report was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the report be ordered printed and referred to the Committee on Health and Public Order.

The motion prevailed unanimously, and the report was ordered printed and so referred.

The following is

THE REPORT:

“CHICAGO, July 10, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—At your last meeting I was directed to consider and report to your Honorable body what steps, if any, may be lawfully undertaken by the Sanitary District to close such saloons as are being carried on without legal license, which are located within the police jurisdiction of the District.

The effect of the provisions of the statutes of the State of Illinois regulating the sales of intoxicating liquors may be summarized as follows:

1. The sale, without license, of spirituous, vinous or malt liquors in less than one gallon is prohibited.

2. The sale of same, without license, outside the incorporated limits of a city, town or village in less quantities than five gallons in original package is prohibited.

3. Incorporated cities, towns and villages may grant licenses for keeping dram-shops within their corporate limits.

4. County Boards may grant licenses to keep dram shops in the townships of the county outside of incorporated cities, towns and villages having the power to license but not within two miles of same.

5. No legal licenses to keep dram-shops can be granted within two miles of territory next adjoining incorporated cities, towns and villages.

6. Cities, towns and villages have no power to grant licenses unless the council or village authorities have adopted a general ordinance on the subject authorizing the issuing of licenses and specifying who shall issue them, the length of time they shall run, the amount to be paid by the applicant, the time and manner of payment, etc.

Any violation of the statutes regulating the sale of intoxicating liquors is a misdemeanor and may be punished in any of the ways provided by law for punishing misdemeanors. Complaint may be made before a Justice of the Peace, an indictment may be secured in a court of record, or one may proceed by information before the County Judge.

The statute authorizing the Sanitary District to appoint and support a police force provides that such police force

shall have and exercise police powers over and within the right of way of the District and for a distance of one and one-half miles on each side of its main drainage channel, but when acting within the limits of a city or village it must act in aid of the regular police force of such city or village and shall then be subject to the direction of its chief of police, city or village marshals or other head thereof.

The term “police powers” is a very comprehensive one and might, under its broadest interpretation, give the Sanitary District the right, through its police force, to look after all matters pertaining to the comfort, health, convenience, good order and general welfare of the inhabitants within the territory one and one-half miles on each side of the main drainage channel.

The provision of the law, however, that in incorporated cities and villages the police force of the district should act in aid of the regular police force of such cities and villages, shows that within the limits of such villages it was not intended that the Sanitary District should do more than re-inforce the local police force when that was unable to preserve order. Within the limits of incorporated towns and villages, therefore, the question as to whether saloons are doing business under licenses lawfully issued, whether the number of licenses issued is so great as to become a menace to the welfare of the respective communities, or, indeed, whether any licenses at all should be issued, are matters for the town or village authorities to determine. If their action is not in accord with the views of the majority of the inhabitants the remedy is in their hands.

Of course, if through apathy or an insufficient police force a condition of affairs were permitted in any town or village which made it more burdensome for the Sanitary District to preserve order upon the line of its work, it would have the same right as any private citizen to set in motion the regular means provided by law for the restraint of disorder and the preservation of peace.

With regard to territory one and one-half miles on each side of the main drainage channel not included within the limits of incorporated cities, towns and villages, nor within two miles of same, which latter are prohibition districts under the general law, the powers of the Sanitary District conferred by the Legislature are somewhat broad. The law itself defines the police powers grant-

ed to be "such police powers as are conferred upon and exercised by the police of organized cities and villages." Whether this is sufficient to authorize the Sanitary District itself, by ordinance, to prescribe regulations for the liquor traffic, within districts one and one-half miles on each side of its channel and beyond two miles from incorporated cities, towns and villages, is a question upon which I am not prepared without further consideration to give an opinion. There can, however, be no question as to its right to seek the enforcement of existing laws.

It is well recognized that the saloon is the greatest single source of disorder. Hence it is directly in the line of police duty to see that all the restrictions thrown by law around the traffic should be enforced. The Sanitary District, therefore, may lawfully, through the exercise of its police powers, insist that no saloon shall do business within two miles of an incorporated city, town or village.

Where all kinds of liquors are sold, as is the rule; the District may require the taking out of a full license. It may confer with the town and village authorities and with the Board of County Commissioners and recommend that the number of licenses issued be limited.

As to the best practical mode of enforcing observance of existing laws no doubt it would be found more speedy and efficacious to proceed by indictment before the grand jury or by information before the County Judge, than by complaint before a Justice of the Peace.

Respectfully submitted,

(Signed) GEO. E. DAWSON,
Attorney."

ORDER FOR COMPLETION OF AGREEMENT
FOR REPAIRS ON DAM NO. 1 AT JOLIET.

Under the head of "Unfinished Business," the joint report from the Attorney and Chief Engineer, transmitting, in duplicate, agreement with the Canal Commissioners of the Illinois and Michigan Canal for certain repairs on Dam No. 1 at Joliet, presented, ordered printed and laid over at the meeting held June 23, 1895, (page 2690 of the Proceedings), was taken up.

In connection with the same, Mr. Kelly presented an order authorizing and directing the President and Clerk to execute the said agreement on behalf of the District,

and authorizing and directing the Clerk to pay the Canal Commissioners, on the voucher of the Chief Engineer, for work done under said agreement, as provided in the order; and the order was read.

Mr. Kelly, seconded by Mr. Cooley, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Boldenweek, Cooley, Eckhart, Gilmore, Kelly, Russell and Wenter—seven (7). Nays—Mr. Altpeter—one (1).

Upon which result the President declared the motion carried, the order adopted and the President and Clerk authorized and directed as provided therein.

The following is

THE ORDER;

"*Ordered*, That the President and Clerk be and they are hereby authorized and directed to execute on the part of the District the agreement between the District and the Canal Commissioners for temporary repairs made by them on Dam No. 1, of the Illinois and Michigan Canal, reported by the Attorney and Chief Engineer at the meeting held June 26th, 1895, and that the Clerk pay, on the voucher of the Chief Engineer, to said Canal Commissioners of the Illinois and Michigan Canal the sum of one thousand (\$1,000.00) dollars as provided in said agreement in full compensation for said work."

The following is

THE AGREEMENT:

"*This Agreement*, Made this twenty-fourth day of October, A. D., 1894, by and between the Sanitary District of Chicago, party of the first part, and the Canal Commissioners of the Illinois and Michigan Canal, party of thesecond part, witnesseth, That:

WHEREAS, The dam known as Dam No. 1, at the lower end of the upper basin in Joliet is in a dangerous condition, originally occasioned by the ice break-up and floods in the spring of 1892, and same has further deteriorated during the season of 1893 and 1894; and the duration of ordinary freshets has been increased by the works of first party made in the fall of 1893 for the control of the flood waters of the Des-plaines River, and the completion of said works will increase both the duration and the maximum volume of floods over said dam; and,

WHEREAS, The present condition of

said dam is such that in the opinion of second party temporary repairs thereto should be made immediately in such manner as to meet the contingences of next season's floods.

Now, Therefore, In consideration of the premises and of the reciprocal promises herein made, it is covenanted and agreed by the parties hereto that second party shall make such repairs to said dam as in its opinion shall be sufficient to meet any flood conditions that now exist or which may be occasioned by the works of first party, and which will preserve navigation in the canal of second party, during the next season of navigation.

It is further agreed that first party, in consideration of the doing of said work by second party and the release of first party by second party from and all responsibility for the sufficiency of said work and the stability of said dam, and from all liability for damages that may be occasioned in case said dam shall give way, shall pay to second party on the completion of said work the sum of one thousand (\$1,000.00) dollars.

In Witness Whereof, The parties hereto have caused these presents to be signed by their respective officers thereunto duly authorized on the day and year first hereinbefore set forth, etc."

REPORT ON PROPOSITION TO PURCHASE STONE EXCAVATED FROM MAIN CHANNEL.

Mr. Eckhart, Chairman, presented a report from the Committee on Finance, with reference to and accompanied by communication from the Carbonized Stone Company of Chicago, making proposition for the purchase of portion of the stone excavated from the Main Channel, presented and referred to that Committee at the meeting held April 10, 1895, (page 2605 of the Proceedings), recommending that said proposition be not accepted; and the report was read.

Mr. Eckhart, seconded by Mr. Russell, moved that the report be adopted, ordered printed, and, with enclosure, placed on file, and the recommendation made in the report concurred in.

The motion prevailed, and it was so ordered.

The following is

THE REPORT:

"CHICAGO, July 10, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—In regard to the com-

munication from the Carbonized Stone Company of Chicago, making proposition for the purchase of portion of the stone excavated from the Main Channel, as set forth in the communication, presented to your Honorable Body and referred to the Committee on Finance at the meeting held April 10, 1895, (page 2605 of the Proceedings), your Committee respectfully returns said communication herewith for filing, with the recommendation that the proposition therein contained be not accepted.

Respectfully submitted,

(Signed)

B. A. ECKHART,

Chairman.

W. H. RUSSELL,

THOMAS KELLY,

Committee on Finance."

(One (1) enclosure.)

REPORT ON REDUCTION IN RENT OF DISTRICT BUILDINGS ON SECTION A.

Mr. Eckhart, Chairman, presented a report from the Joint Committee on Finance and Judiciary, with reference to and accompanied by communication and bill from Heldmaier & Neu, asking a reduction of rent for District buildings on Section A, (on account of Canal Commissioners' claim for part rental of same), presented and referred to that Committee at the meeting held April 19, 1895 (page 2620 of the Proceedings), recommending that the rental of said buildings be reduced as provided in the report; and the report was read.

Mr. Eckhart, seconded by Mr. Russell, moved that the report be adopted, ordered printed, and, with enclosures, placed on file, and the recommendations made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and, with enclosures, placed on file, and the recommendations made in the report concurred in.

The following is

THE REPORT:

"CHICAGO, July 10, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—In regard to the commu-

nication from Heldmaier & Neu, accompanied by bill, asking a reduction of rent for district buildings on Section A, on account of Canal Commissioners claim for part rental of same, as set forth in the communication presented to your Honorable Body and referred to the Joint Committee on Finance and Judiciary at the meeting held April 19, 1895, (page 2620 of the Proceedings), your Committee reports as follows:

We find, as stated in the communication, that the Canal Commissioners charge Messrs. Heldmaier & Neu a rental of twenty-five (\$25) dollars per annum for said buildings by reason of the same being located partly on land owned by the State, and we therefore recommend that the annual rental charged Heldmaier & Neu for said buildings be reduced by that amount, making the same two hundred and fifteen (\$215) dollars.

The communication and bill are returned herewith for filing.

Respectfully submitted,

(Signed.) B. A. ECKHART,

Chairman.

W. H. RUSSELL,

THOMAS KELLY,

WM. BOLDENWECK,

JOHN J. ALTPETER,

Joint Committee on Finance and Judiciary."

(Two (2) enclosures.)

RECONSIDERATION OF ACTION ON REPORT ON POWERS OF DISTRICT FOR PRESER- VATION OF PUBLIC ORDER.

Mr. Eckhart, seconded by Mr. Cooley, moved that the action by which the report of the Attorney on the powers of the District in the preservation of public order in the District police limits just presented, was referred to the Committee on Health and Public Order, be reconsidered.

On roll-call on the reconsideration, the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, and the action by

which said report of the Attorney was referred to the Committee on Health and Public Order, reconsidered, and the report before the Board for further action.

ORDER FOR PROSECUTION OF KEEPERS OF ILLEGAL, ETC., SALOONS.

Mr. Eckhart then presented an order authorizing and directing the Attorney and Marshal to take certain steps to secure the conviction of the keepers of the illegal, unlawful or unlicensed saloons, as set forth in the order; and the order was read.

Mr. Eckhart, seconded by Mr. Cooley, then moved that the report of the Attorney just reconsidered, be ordered printed and placed on file, and the order adopted.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, the report of the Attorney just reconsidered, ordered printed and placed on file, and the order adopted, and the Attorney and Marshal directed as provided therein.

The following is

THE ORDER:

"*Ordered*, That the Attorney and Marshal be and they are hereby directed to proceed to collect such evidence as they may be able, to convict the keepers of illegal, unlawful or unlicensed saloons along the line of the Main Channel of this District and within the one and one-half mile police limit thereof, and to close up such illegal, unlawful or unlicensed saloons."

COMMITTEE ON HEALTH AND PUBLIC ORDER TO CONSIDER SALOON QUESTION WITH PUBLIC OFFICIALS ALONG MAIN CHANNEL.

Mr. Cooley presented an order instructing the Committee on Health and Public Order to confer with the public authorities along the line of the Main Channel with reference to saloons; and the order was read.

Mr. Cooley, seconded by Mr. Russell, moved the adoption of the order.

The motion prevailed unanimously, and the President declared the order adopted and the Committee on Health and Public Order instructed as provided therein.

The following is

THE ORDER:

"*Ordered*, That the Committee on Health and Public Order be and they are hereby instructed to confer with the authorities of the several municipal corporations along the line of the Main Channel of this District, with a view to limiting and mitigating the saloon nuisance; and further, that said Committee report to this Board the result of such conference."

PAYMENT OF "CARL MOLL ET AL.,"
LAND.

Mr. Eckhart, for the Joint Committee on Finance and Engineering, presented an order authorizing and directing the Clerk to pay the Joliet National Bank of Joliet, on the voucher of the Attorney, a certain sum, as provided in the order, for certain right of way lands on Sag Island, DuPage County, in full of verdict for said lands in the case of the Sanitary District of Chicago vs. Carl Moll, et al.; and the order was read.

Mr. Eckhart, seconded by Mr. Kelly, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, the order adopted, and the Clerk authorized and directed to pay the Joliet National Bank of Joliet, on the voucher of the Attorney, a certain sum as provided in the order, for certain right of way lands on Sag Island, DuPage County, in full of verdict for said lands in the case of the Sanitary District of Chicago vs. Carl Moll, et al., as provided in the order.

The following is

THE ORDER:

"*Ordered*, That the Clerk of this District be and he is hereby authorized and directed to pay, on the voucher of the Attorney, to the Joliet National Bank of Joliet, located at Joliet, Illinois, the sum of thirty-eight thousand, six hundred and ninety-six and fifty-eight one-hundredths (\$38,696.58) dollars, to be held on deposit by the said Joliet National Bank of Joliet, subject to the order of the Circuit Court of Will County, Illinois, for the use and benefit of the

owners of or persons interested in certain lands and property on Sag Island in Du Page County, Illinois, otherwise known as Tracts 3a, 4, 5, 8 and 10, in accordance with the order and decree of said court, entered of record June 29th, A. D. 1895, in said court in certain condemnation proceedings brought by the Sanitary District of Chicago against Carl Moll et al, in said Circuit Court of Will County, Illinois, said sum of thirty-eight thousand, six hundred and ninety-six and fifty-eight one hundredths (\$38,696.58) dollars being the total of all amounts awarded by the verdict of the jury, and said order and decree in said condemnation proceedings, with interest thereon from the 29th day of June, A. D. 1895, at the rate of five per cent. (5%) per annum, to the owners of or persons interested in the aforesaid lands and tracts on Sag Island, situated in Du Page County, Illinois, and covering all of the lands on Sag Island east of the Bracken bank not heretofore acquired by said District, said lands being described as follows, to-wit:

Tract 3a—Part of the south fraction of the southwest fractional quarter ($\frac{1}{4}$) of Section fifteen (15), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, bounded and described as follows:

That part of Lot 4 of the Subdivision made by the Circuit Court Commissioners in the certain cause lately pending in the Circuit Court of Du Page County, Illinois, wherein Rudolph Nunnemacher was plaintiff and John A. Lomax, Marie Lomax, Gustave A. Bodenschatz, Mary Bodenschatz, Alexander E. Guild, Jr., William E. Witt, P. A. Witt, Eric P. Linn and Mary Linn, were defendants, as shown by a plat of said Subdivision, filed in said Court with the report of said Commissioners. A copy of which plat, as to Lots 5, 6 and said part of Lot 4, was attached to the amended petition and made a part thereof, being so much only of said Lot four (4) as lies in the southwest fractional quarter ($\frac{1}{4}$) of Section fifteen (15), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, said premises lying and being situated in the County of Du Page and State of Illinois.

Tract 4—That part of the north fraction of the southeast quarter (S. E. $\frac{1}{4}$) of

Section fifteen (15) in Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, bounded and described as follows:

Beginning at the northwest corner of said southeast quarter (S. E. $\frac{1}{4}$) running thence east along the north line of said southeast quarter (S. E. $\frac{1}{4}$) one hundred and fifty-seven and eight one-hundredths (157.08) feet; thence south on a line parallel to and one hundred and fifty-seven and eight one-hundredths (157.08) feet distant from the west line of said southeast quarter (S. E. $\frac{1}{4}$) to the northwesterly reserve line of the Illinois and Michigan Canal; thence southwesterly along said reserve line to said west line of said southeast quarter (S. E. $\frac{1}{4}$); thence north on said west line to the point of beginning; said premises lying and being situated in the County of Du Page and State of Illinois.

Tract 5—Part of the southeast quarter (S. E. $\frac{1}{4}$) of Section fifteen (15) in Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, bounded and described as follows:

Beginning at the northeast corner of said southeast quarter (S. E. $\frac{1}{4}$); running thence west on the north line of said southeast quarter (S. E. $\frac{1}{4}$) to a point on said north line one hundred and fifty-seven and eight one-hundredths (157.08) feet east of the northwest corner of said southeast quarter (S. E. $\frac{1}{4}$) thence south on a line parallel to and one hundred and fifty-seven and eight one-hundredths (157.08) feet distant from the west line of said southeast quarter (S. E. $\frac{1}{4}$) to the northwesterly reserve line of the Illinois and Michigan Canal; thence northeasterly along said reserve line to the east line of said southeast quarter (S. E. $\frac{1}{4}$); thence north along said east line to the point of beginning. Said premises lying and being situated in the County of Du Page and State of Illinois.

Tract 8—That part of the west half (W. $\frac{1}{2}$) of the northwest fractional quarter (N. W. $\frac{1}{4}$) of Section fourteen (14), Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, bounded and described as follows:

Beginning at the southwest corner of said northwest fractional quarter ($\frac{1}{4}$) and running thence east on the south line of

said northwest fractional quarter ($\frac{1}{4}$) to the northwesterly reserve line of the Illinois and Michigan Canal; thence northeasterly along said reserve line to its intersection with a line parallel to and ten and sixty-three one-hundredth chains east from the west line of said northwest fractional quarter; thence north along said line to the southeasterly margin of the Desplaines River; thence northwesterly at right angles to the general course of said river there to the center thread of the current of the said river; thence southwesterly down said center thread to its intersection with a line drawn northwesterly from the point of contact of the west line of said northwest fractional quarter with the said southeasterly margin and at right angles to the general course of said river; thence southeasterly along said line to said southeasterly margin; thence south along said west line to the point of beginning; said premises lying and being situated in the County of Du Page and State of Illinois.

Tract 10—That part of the west half (W. $\frac{1}{2}$) of the northwest fractional quarter of Section fourteen (14) in Township thirty-seven (37) north, Range eleven (11) east of the Third P. M. bounded as follows:

Beginning at the point of intersection of the east line of said west half (W. $\frac{1}{2}$) of said northwest fractional quarter with the northwesterly reserve line of the Illinois and Michigan Canal, and running thence southwesterly along said reserve line to its intersection with a line parallel to and ten and sixty-three one-hundredth chains east from the west line of said northwest fractional quarter; thence north along said line to the southeasterly margin of the Desplaines River; thence northwesterly at right angles to the general course of the said river there to the center thread of the current of said river; thence northeasterly along said center thread to its intersection with a line drawn northwesterly from the point of contact of said east line of said west half (W. $\frac{1}{2}$) of said northwest fractional quarter with the said southeasterly margin and at right angles to the general course of said river there; thence southeasterly along said line to said southeasterly margin; thence south along said east line to the point of beginning. Said lands lying and being situated in the County of Du Page and State of Illinois."

PERMISSION TO DEPOSIT BRICK CLAY
MATERIAL ON RIGHT OF WAY ON
SECTION N.

Mr. Kelly presented an order directing the Chief Engineer to cause the contractors on Section N to excavate to datum and deposit brick clay material on the right of way on said section, as set forth in the order; and the order was read.

Mr. Kelly, seconded by Mr. Russell, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Gilmore, Kelly, Russell and Wenter—seven (7). Nays—Mr. Eckhart—one (1).

Upon which result the President declared the motion carried, the order adopted and the Chief Engineer directed as provided therein.

The following is

THE ORDER:

“Ordered, That the Chief Engineer be

and he is hereby directed to cause the contractors on Section N, under the provisions of their contract, to excavate down to datum and to deposit upon the right of way of the Sanitary District all material suitable for brick clay on said section except upon the west one hundred and fifty (150) feet thereof which shall be excavated to four feet above datum only; and except also so much material as shall be directed by the Chief Engineer to be used in making street approaches and railroad embankments as provided in the contract for said section.”

ADJOURNMENT.

On motion of Mr. Eckhart, seconded by Mr. Kelly, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

JULY 24 AND AUGUST 1, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and seventy-eighth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, July 24, 1895, at 1:30 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell, and Wenter—eight (8), and subsequently Mr. Boldenweck, making a total of nine (9) members; were present.

MINUTES.

The minutes of the adjourned session of the regular meeting of June 26, 1895, held July 2, 1895, and of the regular

meeting held July 10, 1895, were approved as printed, on motion of Mr. Gilmore, seconded by Mr. Russell.

COMMUNICATION FROM MAYOR OF CHICAGO ON COMPLETION OF MAIN CHANNEL AND ADJUNCTS.

The President presented a message, transmitting a communication from Mr. George B. Swift, Mayor of Chicago, requesting information with reference to the completion of the Main Channel and adjuncts thereto, intercepting sewers and the reversal of the grade of lake-emptying sewers, as set forth in the communication; and the message and accompanying communication were read.

Mr. Russell, seconded by Mr. Prendergast, moved that the message and accompanying communication be ordered printed and placed on file.

Mr. Eckhart presented an order, as a substitute for the motion of Mr. Russell,

referring the message and communication to the Joint Committee on Engineering and Finance, and directing the Attorney and General Counsel to render an opinion on the powers of the District in the matter; and the order was read.

Mr. Eckhart, seconded by Mr. Altpeter, moved the adoption of the order.

After discussion, during which the President called Mr. Kelly to the Chair, Mr. Gilmore, seconded by Mr. Prendergast, moved, as a substitute for both of the foregoing, that the President, together with the Attorney and Chief Engineer, be directed to answer the communication of the Mayor of Chicago forthwith.

On roll-call on the motion of Mr. Gilmore, the vote stood: Yeas—Messrs. Cooley, Gilmore, Prendergast and Russell—four (4). Nays—Messrs. Altpeter, Boldenweck, Eckhart and Kelly—four (4). Excused and not voting—Mr. Wenter—one (1).

Upon which result the President declared the motion to substitute lost.

On roll-call, on the motion of Mr. Eckhart, the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Kelly and Wenter—five (5). Nays—Messrs. Cooley, Gilmore, Prendergast and Russell—four (4).

Upon which result the President declared the motion carried, the order adopted, the message and accompanying communication ordered printed and referred to the Joint Committee on Engineering and Finance, and the Attorney and General Counsel directed as provided in the order.

President Wenter then resumed the chair.

The following is

THE MESSAGE, WITH ACCOMPANYING COMMUNICATION:

“CHICAGO, July 24, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—A letter from the Mayor of the City of Chicago, addressed to the President and Board of Trustees of the District, reached me last Monday. After discussing the question of water supply and of its contamination by sewage emptying into the lake, and the powers of the District with reference to the construction of intercepting sewers and the reversal of the flow of the sewers already constructed, the Mayor, in conclu-

sion, asks three questions: When may the completion of the Main Drainage Channel be reasonably expected? How soon thereafter may the city reasonably expect the completion of the adjuncts—intercepting sewers or reversal of the grade of the lake-emptying sewers—so that the sewage pollution of our water may cease? Is there any reason why work should not be begun on the necessary adjuncts and progress simultaneously with the construction of the Main Channel so that when this latter is complete, Chicago may at once have the complete measure of relief for which the city is now being taxed?

As to the first question I believe it is fully understood by the members of this Board that the District being dependent upon general taxation for the necessary funds for the completion of the Main Channel, makes it almost certain that the Channel will not be completed before the summer or fall of 1897.

As to the extent of the powers of the District in the matter of building intercepting sewers and of reversing the grade of the lake-emptying sewers, it might be well to have the opinion of our Attorneys in regard thereto. But so far as the third question asked by the Mayor is concerned, whatever our powers may be in the matter, we are necessarily prevented at this time from entering into any contracts for such work, as the obligations already taken upon the District will require for their payment all of the money coming into the hands of the District up to the time of the completion of the Main Channel. Of course, much greater relief would be obtained so far as the river pollution is concerned, and the danger of the sewage being carried into the lake from that source in time of freshets, if the pumping works at Bridgeport were kept running to their full extent.

The Clerk will read the letter of the Mayor, and it is before you for such action as you may desire to take thereon, and the questions involved should receive your fullest consideration.

Respectfully submitted,

(Signed) FRANK WENTER,
President.”

THE COMMUNICATION:

MAYOR'S OFFICE, }
“CHICAGO, July 19th, 1895. }

To the President and Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In the report of Messrs.

Cooley, Reilly & Guthrie, made to the Citizens' Association August 27, 1885, the present Main Drainage Channel was outlined and an integral part of the plan was the absolute exclusion of all sewage from the lake, either by connecting the lake sewers with intercepting sewers and pumping plants, or by changing the grade of the lake sewers so as to reverse the direction of flow. (See Annual Report, Citizens' Association, 1885.)

The Drainage and Water Supply Commission, appointed by Mayor Harrison in 1886, also included this feature in its preliminary report, submitted to the City Council in January, 1887. (See Council Proceedings, 1887.)

The Sanitary District Act of 1889 was framed with especial reference to this feature. Section 7 of the act is as follows:

"The Board of Trustees of any sanitary district organized under this act shall have power to provide for the drainage of such district by laying out, establishing, constructing and maintaining one or more main channels, drains, ditches and outlets for carrying off and disposing of all drainage, including the sewage, of such district, *together with such adjuncts and additions thereto* as may be necessary or proper to cause such channels or outlets to accomplish the end for which they are designed in a satisfactory manner."

In connection with the above, I respectfully submit the following:

Notwithstanding the extension of the water tunnels at Lake View and Hyde Park, the quality of the water supply through these conduits is not satisfactory. On more than one occasion, during the past eighteen months, the examinations in the Municipal Laboratory have shown evidences of pollution rising beyond the "danger line." It is true that there has been nothing of the sort during the past six months or so, during which period the chemist characterizes the water as "usable." This is due, however, as I am advised, to the fact that we have had less than the usual rainfall during these months, and consequently there has been no rain-flush of the sewers and river out into the lake.

I am further advised, and an examination of the analysis submitted corroborates the statement, that there is no substantial difference in the quality of the water supplied by the four-mile tunnel and that supplied by the two-mile tunnels off Chicago avenue and off Sixty-

eighth street under ordinary conditions; that it is only after the spring thaws or heavy rainfalls, when the foul contents of the sewers and of the river and its branches are swept out into the lake in great volume, that evidences of dangerous sewage pollution are found in the supply of these two mile tunnels, and that even the four-mile tunnel is not beyond the range of this pollution.

The obvious inference from these facts is that it is not worth while to extend the tunnels beyond two miles; that extension, even to four miles, does not guarantee the water supply free from sewage pollution so long as any large volume of sewage obtains access to the lake.

I understand that the Drainage Channel now being constructed by the Sanitary District is intended to remedy this condition, by creating a constant flow of the river and its branches, and of the sewers that empty therein away from the lake and onward toward the Mississippi River.

I also understand (see Section 7 as quoted above) that in connection with this Main Channel, the Sanitary District is empowered to construct such adjuncts as may be necessary to carry all the drainage, including the sewage of the District, into the Main Channel or outlet, and that when this is done, all sewage of the District will be excluded from the lake, either by intercepting sewers and pumps, or by reversing the direction of flow of those sewers which now discharge into the lake.

What especially concerns the City of Chicago at the present time are the following questions:

When may the completion of the Main Drainage Channel be reasonably expected?

How soon thereafter may the city reasonably expect the completion of the adjuncts—intercepting sewers or reversal of grade of the lake-emptying sewers—so that the sewage pollution of our water supply may cease?

Is there any reason why work should not be begun on the necessary adjuncts and progress simultaneously with the construction of the Main Channel, so that when this latter is completed Chicago may at once have the full measure of relief for which the city is now being taxed?

Information upon these points is necessary to enable the administration to determine what measures are necessary

and feasible pending the completion of your work, to protect the public health against the menace of impure water.

Respectfully yours,

(Signed) GEO. B. SWIFT."

The following is

THE ORDER:

"Ordered, That the communication of the Mayor of the City of Chicago to the President and Board of Trustees in relation to the construction of intercepting sewers or of the reversal of the grade of lake-emptying sewers, be referred to the Joint Committee on Engineering and Fi-

nance with directions to report thereon at the next regular meeting of the Board, and that the Attorney and General Counsel be requested to consider the extent of the powers of this District, under the Sanitary District Act, with regard to the construction of sewers, the changing of the grade thereof and the adaptation of the sewerage system of the city to the purposes to be subserved by the construction of the Main Drainage Channel, and to render to the Board their opinion thereon."

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

CLAUSE "J "

Construction Account—

	Total Retained.	Amount released on this Voucher.
Griffiths & McDermott, (Sec. 1, July 16, 1895).....	\$13,923 81	
McArthur Brothers, (Sec. 2, July 16, 1895) ..	14,472 50	
Gilman & Company, (Sec. 3, July 16, 1895) ..	20,058 50	
McArthur Brothers, (Sec. 4, July 16, 1895) ..	14,991 37	1,813 00
The Qualey Construction Co., (Sec. 5, July 16, 1895).....	14,980 88	7,641 00
Mason, Hoge & Company, (Sec. 6, July 16, 1895).....	14,813 32	1,674 00
Mason, Hoge & Company, (Sec. 7, July 16, 1895).....	14,311 50	
Mason, Hoge, King & Co., (Sec. 8, July 16, 1895).....	12,995 94	
Halvorson, Richards & Co., (Sec. 9, July 16, 1895).....	18,167 63	
E. D. Smith & Co., (Sec. 10, July 16, 1895) ..	14,000 00	
Mason, Hoge & Company, (Sec. 11, July 16, 1895).....	14,215 46	
Mason, Hoge & Company, (Sec. 12, July 16, 1895).....	11,875 06	
Mason, Hoge & Company, (Sec. 13, July 16, 1895).....	5,182 97	
Smith & Eastman, (Sec. 14, July 16, 1895) ..	22,995 00	
Wright, Meysenburg, Sinclair & Carry, (Sec. 15, July 16, 1895).....	11,873 75	
Heldmaier & Neu, (Sec. A, July 16, 1895) ..	2,202 71	26,042 58
Heldmaier & Neu, (Sec. B, July 16, 1895) ..	7,692 30	12,281 22
Western Dredging & Improvement Co., (Sec. C, July 16, 1895).....	8,245 56	
E. D. Smith & Co., (Sec. D, July 16, 1895) ..	6,037 66	
Angus & Ghdele, (Sec. E, July 16, 1895) ..	6,978 83	3,715 20
Weir, McKechney & Co., (Sec. F, July 16, 1895).....	2,632 88	
Gahan & Byrne, (Sec. G, July 16, 1895) ..	7,189 77	10,808 00
Gahan & Byrne, (Sec. H, July 16, 1895) ..	6,280 06	5,684 00
Christie & Lowe, (Sec. I, July 16, 1895) ..	7,418 90	500 00
Christie & Lowe, (Sec. K, July 16, 1895) ..	7,328 12	2,775 00
The Heidenreich Company, (Sec. L, July 16, 1895).....	7,772 39	5,848 93

		CLAUSE "J"	
		Total Retained.	Amount re- leased on this Voucher.
The Heidenreich Company, (Sec. M, July 16, 1895).....	\$ 3,056 98	\$ 4,014 50	
Hayes Bros. et al., (Sec. N, July 16, 1895)	652 05	1,757 20	
McMahon & Montgomery Co. et al. (Sec. O, July 16, 1895).....	1,141 23	2,147 75	
Mason, Hoge & Co., (Sec. 6, Extra— Special work, retaining embankment, repairing and raising levee, July 16, 1895).....	275 00		
Mason, Hoge & Co., (Sec. 7, Extra work— Dimension stone, rip-rap work, earth core and embankment, July 16, 1895)	500 00		
Canal Commissioners Illinois and Michi- gan Canal, (repairs, Dam No. 1, Joliet— <i>Final</i> , July 16, 1895).....	1,000 00		
Total.....		\$295,212 18	

ENGINEERING DEPARTMENT.

The Tobey Furniture Co., (furniture)...	\$ 23 25	
Hiram A. Miller, (traveling).....	50 61	
W. T. Keating, (traveling).....	16 00	
		\$ 89 86

GENERAL ACCOUNT.

The Chicago Deposit Vault Co., (rent of offices to July 31, 1895).....	\$ 1,875 00	
John F. Higgins, (printing proceedings, etc., June, 1895).....	131 87	
Chicago Edison Co., (electric lighting)...	41 54	
Thos. F. Judge, (expense).....	45 75	
		\$ 2,094 16

POLICE DEPARTMENT.

Daniel E. Tracy, (horse shoeing).....	\$ 30 30	
Edward Williams, (expense).....	91 81	
John Larney, (feed).....	51 15	
		\$ 173 26
Grand total.....		\$297,569 41

Mr. Kelly, seconded by Mr. Eckhart, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter (*except as to vouchers for Canal Commissioners I. & M. Canal, on which he voted "No,"*), Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

REQUISITIONS.

The Clerk presented the following requisition:

No. 802, Law Department (stationery).....\$38 50

Mr. Kelly, seconded by Mr. Boldenweck, moved that Requisition No. 802, for the Law Department, as read and shown above, be allowed.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, and Requisition No. 802, for the Law Department, as read and shown above, allowed.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the Rules, showing the number of persons in the employ of the District for the weeks ending July 13 and 20, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, July 24, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the weeks ending July 13 and 20, 1895, as the same have been reported to me:

	WEEKS ENDING	
	July 13, 1895.	July 20, 1895.
Engineering Dept.....	163	165
Clerical Dept.....	4	4
Law Dept.....	7	7
Treasury Dept.....	1	1
Police Dept.....	48	48
Telephone Operator.....	1	1
Towpath Force.....	2	2
Total employes.....	226	228

Respectfully submitted,

(Signed) THOS. F. JUDGE,

Clerk.”

MONTHLY REPORT FROM CLERICAL DEPARTMENT.

The Clerk presented a report from the Clerical Department for the month of June, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, July 15, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have the honor to herewith report that the total amount expended on account of and charged to the Clerical Department during the month of June, 1895, was \$900.42, divided as follows:

Salaries.....	\$891 67
Stationery.....	2 00
General expenses.....	6 75
Total.....	<u>\$900 42</u>

There are no outstanding liabilities, and the expenses for the present month will, from present indications, be about \$950.

The total amount expended and charged to the General Account during the month of June, 1895, was \$3,319.01, divided as follows:

Salaries.....	\$2,809 83
Printing.....	168 81
Vaccine points.....	22 50
General expenses.....	317 87
Total.....	<u>\$3,319 01</u>

There are no outstanding liabilities against the General Account, and the expenses for the present month will be about \$5,500.

During the month of June, 1895, there were warrants authorized and drawn against the various accounts for \$1,024,715.84, as follows:

Engineering Department.....	\$16,184 16
Clerical Department.....	900 42
Law Department.....	4,011 87
Treasury Department.....	166 66
General Account.....	3,319 01
Engineering Department (Construction Account).....	624,759 77
Law Department (Land Account).....	107 75
Bond Account.....	150,000 00
Bond Interest and Premium Account.....	221,250 00
Police Department.....	4,016 20
Total.....	<u>\$1,024,715 84</u>

Respectfully submitted,

(Signed) THOS. F. JUDGE,

Clerk.”

MONTHLY REPORT FROM ENGINEERING DEPARTMENT.

The Clerk presented a report from the Engineering Department for the month of June, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, July 24, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I herewith transmit the reports of the Divisions of Construction and Drafting and Designing, showing the detailed operations of the Engineering Department for the month of June, 1895; also a classified statement of expenses to July 1st, 1895.

The expenses for the month of June were as follows:

Salaries.....	\$ 15,580 39
Supplies, etc.....	971 87
Regular contractors' estimates.....	655,722 40
Extra contractors' estimates.....	3,887 00
Total.....	<u>\$ 676,161.66</u>

I estimate the expenses of the department for the month of July will be \$600,000.00.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer.”

“CHICAGO, July 18, 1895.

Isham Randolph, Esq., Chief Engineer:

DEAR SIR—I herewith submit my report of the work of construction for the month of June, the value of which amounts to \$742,364.54 and exceeds that of any previous month since the commencement of the work. This is 33½ per cent in excess of the average monthly requirement, considering the whole work together.

Sections O and N—Nothing was done on Section O but operations were resumed on the collateral channel connecting same with the west fork of the South Branch of Chicago River. About 9,000 cubic yards were taken out with wheel scrapers and carts and on the last day of the month one

of the dipper dredges had worked its way through the west fork up to the north end of the collateral channel prepared to begin the excavation of the latter.

A wheel scraper force commenced work on Section N just west of Kedzie avenue, depositing the waste material alongside the channel, leaving a berm of 80 feet. The amount excavated since the last estimate is 5,100 cubic yards.

On Sections M and L the work was continued in the usual effective manner with four steam shovels and inclines. Three of the shovels were operated day and night shifts, and one day shifts only. Considerable time was consumed in shifting the inclines and turning the shovels, all of which are now working down to grade. The output for both sections for the month was 128,000 cubic yards, an average of 703 cubic yards per shift.

During the first half of the month a force was employed completing the restoration of the slopes that were impaired by last winter's frost.

Sections I and K are maintaining their previous rate of progress with the four steam shovels and truss conveyors, two of which worked days and two both day and night shifts. A wheel scraper force was also employed in advance of the steam shovels taking down the slopes. The output of the steam shovels on both sections was 130,675 cubic yards, an average of 807 yards per shift for the 162 shifts employed.

Sections H and G show a marked improvement, and with their increased facilities should maintain progress rates hereafter. The excavation on Section H was done with wheel scrapers, one steam shovel and incline and the Hoover & Mason conveyor. Seven thousand six hundred and fourteen yards were handled with wheel scrapers, 23,913 yards with the steam shovel and incline in 47 shifts (an average of 509 yards per shift), and 4,996 yards with the Hoover & Mason conveyor in 13 shifts, an average of 384 yards per shift. The latter average, however, is not a fair indication of the capacity of the conveyor as much time was consumed when starting up in clearing up the pit, in doing which the material had to be loaded on to the conveyor by manual labor. A dynamo is being put in to enable them to work night

shifts which will further increase the output.

On Section G the steam shovel and incline and the steam shovel and belt conveyor made good progress, the former excavating 29,645 yards in 47 shifts, an average of 631 cubic yards per shift, working from grade, and the latter 25,653 yards in 50 shifts, an average of 513 yards per shift. A wheel scraper force was also employed in working down the slopes, its output being 5,357 cubic yards. Considering the two sections together, the value of the work done during the month was 99.3 per cent of the contract requirement.

Section F shows an output of 23,200 cubic yards, which is more than double that of the preceding month. The plant has been re-arranged during the current month which should insure better results. The section is now equipped with two steam shovels with truss conveyors of the Christie & Lowe pattern, which is probably sufficient to fulfill the requirements. In excavating the 23,200 yards the two shovels worked 73 shifts, an average of 318 yards per shift. Both shovels are provided with an electric light plant and are expected to work both day and night shifts.

Section E, although still in arrears, records a gain of about 50 per cent over the preceding month, the output being 62,300 cubic yards. Of this quantity about 5,800 yards was taken out with wheel scrapers and the balance with two steam shovels and one special pattern dredge shovel. One of the steam shovels was employed 25 shifts, averaging 504 yards per shift; the other shovel worked 33 shifts, averaging 653 yards per shift, and the steam dredge under disadvantageous circumstances averaged 546 yards for the 35 shifts.

Section D is credited with 64,500 cubic yards of excavation for the month of June, of which about 4,000 yards were moved with small cars loaded by manual labor and the balance with steam shovels which were employed an aggregate of 117 shifts, averaging 517 yards per shift. A force averaging ten men and five teams were also employed in trimming the slopes.

Section C continues to gain and gives an excess of over 30 per cent over the preceding month, which amounts to 163 per

cent of its monthly requirement. The quantity excavated was 93,000 yards, of which 30,000 yards were handled with teams and shovellers and 63,000 yards with four steam shovels in 133 shifts, an average of about 473 yards per shift.

Section B also makes a creditable record for the month, the estimate amounting to 81,500 cubic yards, which is 171 per cent of the contract rating. Of this amount 27,000 yards were moved with a car and wheelbarrow force and 54,500 yards with two steam shovels that averaged about 540 yards each for 101 shifts.

Section A returns an estimate of 27,500 cubic yards, most of which was taken out with cars and wheelbarrow gangs in opening pits for the operation of steam shovels, one of which has been put in service and another delivered on the ground ready for use as soon as arrangements are completed for the disposition of the material.

Section 1—On this section there were excavated 43,700 cubic yards of glacial drift by four steam shovels in 95½ shifts, an average of 457 cubic yards per shift. There were also excavated 10,700 cubic yards of solid rock with three inclines in 67 shifts, an average of about 160 yards per shift. Two pneumatic derricks were added to the plant during the latter part of the month which are expected to greatly facilitate the handling of the rock.

Section 2 employed three steam shovels in glacial drift, 54.1 shifts during the month, the output of which was 23,388 cubic yards, an average of 428 yards per shift. About 6,612 yards were also handled with cars loaded by manual labor cleaning up the rock surface. The two cableways, engaged day and night, made 93.6 shifts and moved 32,330 cubic yards of solid rock, an average of 345 yards per shift. Four channellers were in operation day and night.

Section 3 has nearly completed the excavation of glacial drift. One steam shovel was employed thereon 21.6 shifts during the month and moved 8,200 cubic yards, an average of 380 yards per shift. The four cableways were operated a total of 181.3 shifts in the solid rock excavation and handled 55,760 cubic yards, averaging 308 yards per shift. The steam hoist also averaged 148 yards per shift for 24 6 10

shifts (3640 yards) making the total rock excavation for the month 59,400 cubic yards.

Eight channellers were in operation, about one-half of which worked both day and night. Three forces were employed on masonry work and laid about 1,500 cubic yards of retaining wall.

Section 4—In the glacial drift four steam shovels were employed, one of which worked nights also. They worked 101.9 shifts and moved 66,530 cubic yards, an average of 653 cubic yards per shift. The east cableway also moved about 1,870 yards of glacial drift. Of the two cableways engaged in solid rock excavation the east one worked in the day time only and the other both day and night. Their output was 22,300 cubic yards in 55.9 shifts, an average of 374 yards each per shift. Two channellers worked day and night.

Section 5 made its greatest progress during the month of June, the amount of work done equaling 234 per cent of its monthly requirement. The work done embraced glacial drift and solid rock excavation and masonry put in retaining walls. The glacial drift excavation amounted to 51,300 cubic yards, which was handled mostly by three steam shovels which averaged about 440 yards per shift. The solid rock excavation amounted to 19,100 cubic yards, which was taken out by a cableway, a steam hoist and derricks. Four thousand cubic yards of masonry were laid in the retaining walls on which from four to six forces were engaged.

Section 6—The work on this section also included glacial drift and rock excavation, and masonry in retaining walls. The glacial drift was moved with cableways, steam shovels, cars and wheelbarrows. The two cableways averaged 297 cubic yards per shift and the three steam shovels 188 cubic yards per shift. The total amount excavated was 27,900 cubic yards.

The solid rock excavation amounted to 19,900 cubic yards, the most of which was taken out by two cableways that averaged 351 yards per shift. Six channellers were employed during the entire month. From three to five forces were engaged on mason work and laid 4,200 cubic yards of retaining wall.

Section 7 made good progress during the month and on the 1st inst., only lacked about 100 of being up to the contract requirement. The excavation was wholly in solid rock and amounted to 48,200 cubic yards, which was handled by two Hulett derricks averaging 203 yards per shift, two Hulett inclines averaging 242 yards per shift, and one cableway that averaged 366 yards per shift. Seven channellers were employed of which two worked both day and night. There were also 1,100 cubic yards of masonry laid in retaining walls.

Section 8—The excavation on this section was also in solid rock and amounted to 46,800 cubic yards. The material was handled by five cableways, employed in the day time only, that averaged 437 cubic yards per day. From six to eight channellers were operated during the month, and 600 cubic yards of masonry were placed in the retaining walls.

Sections 9, 10, 11, 12 and 13 are all well in advance of their contract requirements and the excavation of Section 13 was practically completed on the 3rd inst., only enough material being left for masonry with which to wall up the clay pockets along the sides. The excavation in these sections was all in solid rock and the quantities moved during the month were as follows:

- Sec. 9—51,000 cu. yds. of excavation.
- Sec. 10—35,400 cu. yds. of excavation.
- Sec. 11—37,300 cu. yds. of excavation.
- Sec. 12—46,700 cu. yds. of excavation.
- Sec. 13—24,900 cu. yds. of excavation.
- Sec. 13— 2,399 cu. yds. of masonry.

Section 14—Work on this section has been continued with the six double boom derricks that handled 51,400 cubic yards of solid rock, a falling off of a little over 30,000 yards from the preceding month, which is attributed to delays occasioned by the breaking of machinery. It is expected, however, that the excellent record of the two preceding months will be again equalled.

Section 15 continues to gain, and for the first time exceeded its monthly rating, its percentage being 114. Still greater improvement will probably be shown during the current month. The work was performed with two steam shovels, three

July 24,]

—2747—

[1895.

locomotives and two inclines, the output being 45,500 cubic yards of solid rock.

The condition of the work of excavation, as a whole, on the 1st inst. is as follows:

Entire quantities embraced in
the Main Channel and River

Cu. Yds.

Diversion (exclusive of Collateral Channel Section O).....	39,281,357
Amount excavated up to July 1.	24,022,011
Balance remaining.....	<u>15,259,346</u>

Respectfully submitted,
(Signed) U. W. WESTON,
Superintendent of Construction."

STATEMENT SHOWING AMOUNT OF WORK DONE DURING THE MONTH
OF JUNE, 1895—(MAIN CHANNEL).

SECTIONS.	Amount Done During June.	Average Monthly Requirement.	Deficiency for June.	Excess Over Monthly Requirement.	Per Cent. of Monthly Requirement.
O.....	\$ 1,597 97	\$ 13,271 42	\$ 11,673 45	.....	12.
N.....	1,173 00	10,674 33	9,501 33	.....	11.
M.....	5,338 20	6,274 34	936 14	.....	85.
L.....	20,369 80	8,682 82	.....	\$11,686 98	235.
K.....	19,075 00	11,559 57	.....	7,515 43	165.
I.....	15,598 25	11,398 49	.....	4,197 76	137.
H.....	10,591 67	12,493 57	1,901 90	.....	85.
G.....	16,983 40	15,277 64	.....	1,705 76	111.
F.....	6,844 00	13,493 77	6,649 77	.....	51.
E.....	16,821 00	23,230 53	6,409 53	.....	72.
D.....	17,052 19	19,215 65	2,163 46	.....	89.
C.....	21,855 00	13,443 10	.....	8,411 90	163.
B.....	22,009 05	12,901 32	.....	9,107 73	171.
A.....	8,411 46	24,012 30	15,600 84	.....	35.
1.....	27,307 20	44,801 03	17,493 73	.....	61.
2.....	44,520 00	20,950 88	.....	23,569 12	212.
3.....	54,611 00	29,177 70	.....	25,433 30	187.
4.....	51,356 00	22,982 67	.....	28,373 33	223.
5.....	42,941 50	18,387 51	.....	24,553 99	234.
6.....	35,809 50	26,827 41	.....	8,982 09	133.
7.....	39,002 00	25,622 15	.....	13,379 85	152.
8.....	36,933 00	21,799 22	.....	15,133 78	169.
9.....	39,219 00	19,325 00	.....	19,894 00	203.
10.....	28,320 00	22,458 34	.....	5,861 66	126.
11.....	29,560 25	19,455 05	.....	10,105 20	152.
12.....	37,009 75	20,413 93	.....	16,595 82	181.
13.....	27,009 25	21,140 02	.....	5,869 23	128.
14.....	37,522 00	22,648 61	.....	14,873 39	166.
15.....	26,959 00	23,607 65	.....	3,351 35	114.
Totals.....	\$741,797 54	\$555,526 02	\$ 72,330 15	\$258,601 67	133.53-100

TABLE OF AMOUNT OF WORK DONE (INCLUDING RIVER DIVER

SECTIONS.	CONTRACTORS.	MAIN CHANNEL.		RIVER DIVERSION.		RUBBLE MASONRY.
		<i>Glacial Drift.</i>	<i>Solid Rock.</i>	<i>Glacial Drift.</i>	<i>Solid Rock.</i>	
		Cubic Yds.	Cubic Yds.	Cubic Yds.	Cubic Yds.	Cu. Yds.
O	McMahon & Montgomery Co. et al.	555,951				
N	Hayes Bros. et al.	76,400				
M	The Heidenreich Co.	532,600				
L	The Heidenreich Co.	797,100				
K	Christie & Lowe.	686,700				
1	Christie & Lowe.	937,385				
H	Gahan & Byrne.	215,451				
G	Gahan & Byrne.	694,454				
F	Weir, McKechney, & Co.	537,993		158,234		
E	Angus & Gindele.	687,163		95,718		
D	E. D. Smith & Co.	1,392,900				
C	Western Dredging & Imp't. Co.	1,057,363		162,537		
B	Heldmaier & Neu.	388,253		212,486		
A	Heldmaier & Neu.	908,569		128,283		
1	Griffiths & McDermott.	673,366	21,600	5,876		
2	McArthur Bros.	670,100	192,000	29,516		
3	Gilman & Co.	388,010	476,400			1,800
4	McArthur Bros.	919,500	111,900			
5	The Qualey Construction Co.	712,900	107,200			8,800
6	Mason, Hoge & Co.	601,800	209,800	114,800		8,700
7	Mason, Hoge & Co.	172,400	571,900	97,000	41,800	1,700
8	Mason, Hoge, King & Co.	41,600	869,700	56,600	96,900	800
9	Halvorson, Richards & Co.	71,700	860,700	37,700	16,000	
10	E. D. Smith & Co.	29,200	1,065,000	27,400	56,500	
11	Mason, Hoge & Co.	44,032	787,200	5,756	11,433	
12	Mason, Hoge & Co.	30,061	871,300	11,739		679.44
13	Mason, Hoge & Co.	32,822	1,007,500			4,383
14	Smith & Eastman.	343,700	655,600			
15	Wright, Meysenburg, Sinclair & Carry	30,100	144,600			
Totals.....		14,729,578	7,952,400	1,143,650	222,683	26,862.44

Main Channel, glacial drift.....
 Main Channel, solid rock.....
 River Diversion, glacial drift.....
 River Diversion, solid rock.....
 Rubble Masonry.....

Total amount required to be done July 1st, 1895.....

Total amount done July 1st, 1895.....

Total amount short as per contracts.....

Total value of work done under contracts July 1st, 1895.....

Reserved.....
 { 12½ per cent.....
 { 10 per cent.....

Total value of vouchers paid, including those of July 1st, 1895.....

Total value of vouchers paid for collateral work, including those of

Total disbursement, Construction Account.....

NOTE.—*Overhaul to Levee—Section 1 not included. †Overhaul to

SION) AND CONDITION OF WORK ON CONTRACTS, JULY 1ST, 1895.

Total value of work done to July 1st, 1895, on each section.	Total value of work required to be done to July 1st, 1895.	Amounts behind as per contracts.	Amounts ahead as per contracts.	Average monthly progress called for in contracts.	Average monthly progress necessary Jan. 1st, 1895, to time of completion.	Progress made during month of June, 1895.
\$ 116,372 08	\$ 201,124 00	\$ 84,751 92		\$14,366 00	\$14,644 94	\$ 1,597 97
17,572 00	149,440 62	131,868 62		10,674 33	14,986 56	1,173 00
115,574 20	94,115 10		\$ 21,459 10	6,274 34	5,140 87	5,338 20
157,028 70	130,242 30		26,786 40	8,682 82	7,926 55	20,369 80
171,675 00	173,393 55	1,718 55		11,559 57	11,583 70	19,075 00
234,346 25	170,977 15		63,369 10	11,398 49	7,178 89	15,596 25
62,480 79	187,403 55	124,922 76		12,493 57	16,957 53	10,591 67
194,447 12	229,164 60	34,717 48		15,277 64	14,632 96	16,983 40
167,291 66	211,325 24	44,033 68		13,493 77	13,493 77	6,844 00
214,202 28	364,417 05	150,214 77		23,230 53	26,990 69	16,821 00
368,247 94	461,175 60	92,927 66		19,215 65	22,571 94	17,052 19
286,676 50	352,697 04	66,020 54		14,695 71	17,360 69	21,855 00
297,200 88	351,301 92	54,101 04		14,637 58	17,688 83	22,009 05
317,537 46	604,868 40	287,330 94		25,202 85	35,435 74	8,411 46
*288,859 76	617,228 05	328,368 29		44,801 03	55,635 03	27,307 50
490,385 98	613,421 34	123,035 36		21,152 46	30,636 53	44,520 00
563,939 70	574,170 00	10,230 30		29,177 70	33,936 03	54,611 00
529,405 00	689,480 10	160,075 10		22,982 67	36,357 44	51,356 00
318,419 00	542,431 55	224,012 55		18,387 51	32,729 52	42,941 50
374,755 00	460,148 02	85,393 01		26,896 13	32,371 16	36,376 50
526,638 50	526,751 38	112 88		25,699 42	26,037 97	39,002 00
750,665 50	743,349 93		7,315 57	23,979 03	26,264 41	36,933 00
702,626 30	616,907 13		85,719 17	19,900 23	21,128 85	39,219 00
911,350 00	737,187 75		174,162 25	23,780 25	14,817 52	28,320 00
648,017 15	611,303 57		36,713 58	19,719 47	17,553 87	29,560 25
705,495 70	635,516 74		69,978 96	20,500 54	20,959 47	37,009 75
776,980 47	655,340 62		121,639 85	21,140 02	12,819 77	27,009 25
581,264 00	702,106 91	120,842 91		22,648 61	38,123 95	37,522 00
91,033 00	212,468 85	121,435 85		23,607 65	27,107 55	26,959 00
\$10,980,487 92	\$12,619,458 06	\$2,246,114 12	\$607,143 98	\$565,575 57	\$653,022 53	\$742,364 54

	<i>Cubic Yards.</i>
.....	\$14,729,578
.....	7,952,400
.....	1,143,650
.....	222,683
.....	26,862.44
.....	\$12,619,458 06
.....	10,980,487 92
.....	\$1,638,970 14
.....	
.....	\$10,980,487 92
.....	\$1,355,782 58
.....	105,479 28
.....	1,461,261 86
.....	\$9,519,226 06
.....	+644,699 67
.....	\$10,163,925 73

Levee—Section 1 included. ‡Including 26,300 cubic yards Collateral Channel.

“CHICAGO, July 10, 1895.

Mr. Isham Randolph, Chief Engineer:

DEAR SIR—The work of the Division of Drafting and Designing for the month of June was as follows:

The survey party has been working under the direction of Mr. Seymour engaged in the re-measurement of the Main Channel.

The preparation of plans for regulating works, tail race and channel through Joliet was continued.

Considerable time was given to the collection of data in connection with the consideration of the lake level question as affected by the Main Drainage Channel.

The determination of the hydraulic elements of the Chicago River and its capacity for flow was continued.

The testing of cement for use in retaining walls was continued, as was also the work of preparing record photographs, and the maintenance of water gauges.

During the month the following work was finished: One map of the right of way in Du Page County and two maps in Will County for the County Recorder's Office; one map showing the property owners on Ogden Ditch; three maps of the crossings of the Southwest boulevard and Western avenue over the Channel; one map of Section 12, Township 38 North, Range 12, East, showing the levees and spoil areas; one map of the right of way and railroads between Corwith and Western avenue; one map showing the

original soundings of the Desplaines River on Contract Sections A and B, and one map of the crossing of the Pan Handle Railroad.

Also finished the original and tracing of the profile of the Niagara River and Lake Ontario; a tracing of the profile of the Great Lakes and the St. Lawrence River; tracings of parts 1, 10 and 11 of the maps of the Chicago River survey; tracings of 6 charts of discharge observations; a tracing of a table showing the results of cement tests; three profiles of the Southwest boulevard and Western avenue crossing; a progress profile of the work; two plats showing the comparative fluctuations of the surfaces of Lake Michigan and Lake Erie; a plan of proposed landing places on the Main Channel; a profile of the Elgin, Joliet & Eastern Railroad from the Illinois and Michigan Canal to the bluff, showing high water lines; a cross-section at Summit of the Main Channel, showing the earth and other material, and a map and profile of a proposed change in location of the Chicago, Madison & Northern Railroad.

Work was continued on the contour map of Sag Island, plat books, progress profiles and Illinois River map.

Platting on a contour map from Lockport to Joliet was commenced.

Expenses for July will be about the same as for June.

Very respectfully,

(Signed) THOS. T. JOHNSTON,
Assistant Chief Engineer."

SANITARY DISTRICT OF CHICAGO—ENGINEERING DEPARTMENT.

CLASSIFIED STATEMENT OF EXPENDITURES DURING THE MONTH OF JUNE, 1895.

CLASSIFICATION.	Eng. Expenses.		Construction.		Total for Month.		Previously Reported.		Total to Date.	
	Salaries.	Supplies, Etc.	Regular.	Extra.	Eng. Expenses.	Construction.	Eng. Expenses.	Construction.	Eng. Expenses.	Construction.
Preliminary Sundries.....							\$120,633 75		\$120,633 75	
Locating Route.....							32,222 94		32,222 94	
borings and Test Pits.....							16,266 50		16,266 50	
Maps, Plans and Specifications.....	\$ 631 00	\$ 28 98			\$ 659 98		33,911 16		34,571 14	
Chicago River Survey.....							17,082 66		17,082 66	
Survey of street lines adjacent to Chi. River.....							7,476 32		7,476 32	
Right of Way.....	294 00	38 96			332 96		19,272 03		19,004 99	
Flood Measurements.....	320 00	54 77			374 77		15,709 05		16,083 82	
Disposal of Floods at Joliet.....	503 00	24 76			527 76		21,573 89		22,101 59	
Regular Construction.....							260,473 87	\$8,883,258 24	271,633 42	\$9,538,680 64
Extra Work—Main Channel.....	10,830 76	388 79	\$655,722 40		11,219 55	\$655,722 40		13,455 51	13,455 51	
Extra Work—River Diversion.....							9,723 42	333,707 41	9,723 42	333,707 41
Diversion North Branch Chicago River.....							3,643 51		3,643 51	
Levees, Trestles and Embankments.....							813 75	176,631 60	813 75	170,618 60
Spillway.....						2,987 00	1,754 91	20,518 41	1,754 91	20,518 41
Tow Path.....							5,246 04		5,246 04	
Building Western Stone Company's Bridge.....							1,157 05	19,029 05	1,157 05	19,029 05
Building Stephens Street Bridge.....							985 06	23,329 80	985 06	23,329 80
Building Atchison, Topeka & Santa Fe Bridge.....							770 72	18,738 80	770 72	18,738 80
Building Mt. Forest Foot Bridge.....							32 17		32 17	
Repairing and Moving Bridges.....							1,050 13	7,756 19	1,050 13	7,756 19
Office Building at Sag.....							2,339 43		2,339 43	
Saving of Building at Sag.....								781 63		781 63
Mortar, Sand and Cement Tests.....	816 00	51 11			867 11		3,470 98		4,037 79	
Saving of Dimension Stone.....				900 00		900 00		8,008 00		8,968 00
Erosion Test.....							1,496 75		1,496 75	
Temporary Sanitary Relief.....							237 60		237 60	
Photographs of Works.....	195 00	25 18			220 18		2,179 11		2,309 29	
Public Reports.....							1,138 14		1,138 14	
Remasurement of Main Channel.....	789 63	334 05			1,123 68				1,123 68	
Effect of Main Channel water on Lake Levels.....	461 00				461 00				461 00	
General Account.....	740 00	25 27			765 27		67,467 33		68,232 60	
Totals.....	\$15,580 39	\$ 971 87	\$655,722 40	\$3,887 00	\$16,552 26	\$659,609 40	\$647,828 51	\$9,501,274 73	\$664,380 77	\$10,163,884 13

PROPOSITION FOR ARBITRATION ON PRICE
OF CEMENT MASONRY WALLS ON
SECTIONS 2 AND 4.

The Clerk presented a report from the Chief Engineer, proposing the settlement by arbitration of the price to be paid McArthur Brothers, contractors for Sections 2 and 4, for cement masonry retaining walls to be built in place of dry rubble walls on said sections, as set forth in the report; and the report was read.

In connection with the report, Mr. Kelly presented an order defining the limits and conditions of the proposed arbitration; and the order was read.

Mr. Kelly, seconded by Mr. Eckhart, moved that the report and order be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the report and order were ordered printed and so referred.

The following is

THE REPORT:

"CHICAGO, July 24, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—I have been unable to agree with McArthur Brothers as to the price to be paid for cement for retaining walls (to be built under your order substituting cement masonry for dry rubble walls on all those sections calling for retaining walls as a part of the plan of the work). I have been in negotiation with said McArthur Brothers for many months past, and therefore recommend that the price to be paid for this work be settled by arbitration and suggest that your Honorable Board appoint an arbitrator, McArthur Brothers appoint another and the two so appointed select a third whose decision shall be binding upon both the parties in whose behalf the arbitration is made. It should be understood that the minimum price for completed walls be not less than \$3.00 nor the maximum in excess of \$4.00 per cubic yard. The expense of the arbitration to be borne equally by the Sanitary District and McArthur Brothers.

I deem it very important that this question should be speedily settled as the amount of masonry involved is a very large one, about 86,000 cubic yards, and the rock available for completing it is being destroyed rapidly in the regular course of the excavation of the section, and at the present rate of progress nothing will be left by the middle of

March next, in which case I anticipate that the cost of completing these walls will be largely in excess of any adjustment which can be made at this time.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

The following is

THE ORDER;

"WHEREAS, The recommendation made by the Chief Engineer that the price to be paid to McArthur Brothers for cement masonry retaining wall be arrived at through the decision of arbitrators, is recognized as a proper solution of the questions at issue between this Board and said McArthur Brothers; therefore, be it

Ordered, That the said arbitration shall be entered into and that the arbitrator for and on behalf of this District shall be selected by the President and the Chairman, respectively, of the Committees on Engineering and Finance; and further be it

Ordered, That the work of said Board of Arbitration shall be confined to ascertaining the net increase in cost of cement retaining wall over dry rubble retaining wall per cubic yard and the net price so found, increased by fifteen per cent, to be the price fixed by the said Board of Arbitration to be paid to McArthur Brothers in addition to the original contract prices on Sections 2 and 4, respectively, for dry rubble wall, evidence as to the elements of additional cost of cement masonry to be submitted by the parties to this controversy; and be it further

Ordered, That one-half of the cost of this arbitration be paid by this District on vouchers approved by the Chief Engineer."

APPROVAL OF REQUISITIONS NOS. 523,
938, 939 AND 1063.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by Requisitions No. 523, for the Engineering Department, Nos. 938 and 939, for the Police Department, and No. 1063, for the Clerical Department, presented and referred to that Committee at the meeting held July 10, 1895 (page 2727 of the Proceedings), recommending that said requisitions be allowed; and the report was read.

Mr. Cooley, seconded by Mr. Russell,

moved that the report be adopted, ordered printed and placed on file, the recommendation made therein concurred in, and the accompanying requisitions allowed.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, the recommendation made therein concurred in, and the accompanying requisitions allowed.

The following is

THE REPORT:

“CHICAGO, July 24, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In regard to Requisitions No. 523, for the Engineering Department, Nos. 938 and 939, for the Police Department, and No. 1063, for the Clerical Department, presented to your Honorable Body and referred to the Joint Committee on Engineering and Finance at the meeting held July 10, 1895, (page 2727 of the Proceedings), your Committee respectfully report that they have considered the same and find the items thereon proper.

Your Committee therefore return the said requisitions herewith, with the recommendation that the same be allowed.

Respectfully submitted,

(Signed) L. E. COOLEY,
Chairman.

B. A. ECKHART,
THOMAS KELLY,
W. H. RUSSELL,
WM. BOLDENWECK,
JOHN J. ALTPETER,

Joint Committee on Engineering and Finance.”

(Accompanied by four requisitions).

REPORT ON CONFERENCE ON SALOON QUESTION WITH PUBLIC OFFICIALS ALONG MAIN CHANNEL.

Mr. Gilmore, Chairman, presented a report from the Committee on Health and Public Order, with reference to a conference on the saloon question with

the public officials along the Main Channel, presented in response to an order passed at the meeting held July 10, 1895, (page 2734 of the Proceedings); and the report was read.

Mr. Gilmore, seconded by Mr. Altpeter, moved that the report be adopted, ordered printed and placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT:

“CHICAGO, July 24, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Committee on Health and Public Order who were directed by your Honorable Body (Proceedings page 2734) to confer with the authorities of the several municipal corporations along the line of the Main Channel of the District with a view to limiting and mitigating the saloon nuisance, beg leave to report as follows:

A conference was had with the Public Service Committee of the Board of County Commissioners of Cook County, to which had been referred the matter of renewal of licenses in this county for another year. They expressed a desire to aid in preventing the illegal sale of intoxicating liquors, and agreed that the applications should be closely scrutinized so that no applications for saloons located within two miles of any incorporated city, town or village should be favorably passed upon by them and recommended to the Board of Commissioners for licenses to issue.

They also stated that in case any saloons which had taken out licenses to sell malt liquors only were found selling distilled products steps would be taken at once to compel them to take out full licenses or to close up their places. In either case the one hundred and fifty dollars paid for the malt liquor license would be retained. The prospect of suffering this penalty it was thought would be sufficient to prevent the taking out of the beer licenses except when there was an honest intention of limiting the sales to malt liquors.

Your Committee also had an interview with the Village Attorney of Summit and Spring Forest who said that he should recommend the Village Boards to confine the issue of licenses strictly to places located within the corporate limits and that he would co-operate

with the Sanitary District in any efforts it might make to limit the traffic to the boundaries prescribed by law.

Our Law Department has already commenced proceedings against three or four of the worst of the places doing business within two miles of village boundaries and the cases will come up shortly for trial in the County Court.

Respectfully submitted,

(Signed) A. P. GILMORE,
Chairman.

JOHN J. ALTPETER,

Committee on Health and Public Order."

ORDER DIRECTING CONTRACTORS TO PAY DISCHARGED MEN IN CASH.

Mr. Altpeter presented an order, directing contractors to pay discharged men in cash, and authorizing and directing the Attorney and Clerk to cash any unpaid time checks and withhold contractors warrants, as provided in the order; and the order was read.

Mr. Altpeter, seconded by Mr. Gilmore, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, the order adopted, and the Attorney and Clerk authorized and directed as provided therein.

The following is

THE ORDER:

"WHEREAS, Complaints from time to time reach the members of the Board of the refusal by certain contractors to pay discharged employes promptly in money, and that time checks are given instead payable in some instances from three to five weeks after the date of discharge, thus compelling such employes either to loose their time and be at the expense of another trip to the work or to cash their checks at a large discount; therefore, be it

Ordered, That the contractors be requested to pay in cash at the time of discharge the amount due any men discharged by them for any cause, and that the Attorney be and he is hereby authorized and directed where complaints are brought to his attention to investigate the circumstances of each case, and if in his opinion the men are entitled to pay-

ment, that he so inform the contractor interested, and if payment is not made pursuant to such recommendation, the Clerk of the District be authorized to cash such time checks as are reported to him by the Attorney and withhold the warrants of the contractors issuing same until repayment is made."

ORDINANCE FOR TAX LEVY FOR 1895.

Mr. Eckhart, Chairman, presented, from the Committee on Finance, an ordinance levying the taxes for the year 1895 for the corporate purposes of the District; and the ordinance was read.

Mr. Eckhart, seconded by Mr. Kelly, moved the passage of the ordinance.

On roll call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, and the ordinance passed.

The following is

THE ORDINANCE:

"Be it Ordained by the Board of Trustees of the Sanitary District of Chicago:

SECTION 1. That the sum of four million (\$4,000,000.) dollars be and the same is hereby levied and assessed on the real and personal property within the Sanitary District of Chicago, subject to taxation according to the valuation of said property, as the same is assessed and equalized for state and county purposes for the year 1895; the taxes levied and assessed under this ordinance being for the corporate purposes of the Sanitary District of Chicago.

SEC. 2. The Clerk of this District is hereby directed to certify on or before the second Tuesday of August, 1895, to the County Clerk of Cook County, the amount required to be raised by tax, pursuant to this ordinance, and to that end to file with the said County Clerk a copy of this ordinance duly certified by the Clerk of said District.

SEC. 3. This ordinance shall take effect and be in force from and after its passage."

ADJOURNMENT TO SPECIAL TIME.

Mr. Cooley, seconded by Mr. Boldenweck, moved that when the Board adjourn it do adjourn to meet Thursday, August 1, 1895, at 2 o'clock P. M.

The motion prevailed unanimously, and it was so ordered.

COMMUNICATION ON DELAY OF WORK ON
SECTIONS N AND O.

The Clerk presented a communication from the Illinois Dredging Company, representing McMahon & Montgomery Company, Green's Dredging Company, the Chicago Dredging and Dock Company, and the Fitz Simons & Connell Co., contractors for Sections N and O, with reference to the delay in work on said sections, as set forth in the communication; and the communication was read.

Mr. Kelly, seconded by Mr. Boldenweck, moved that the communication be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the communication was ordered printed and so referred.

The following is

THE COMMUNICATION:

"CHICAGO, July 20, 1895.

*Hon. Frank Wenter, President Board of
Sanitary Trustees, Chicago, Ill.:*

DEAR SIR—The undersigned contractors for the excavation and removal of material from Sections "N" and "O" Main Drainage Canal, beg leave to call your attention to the following facts: That, as you well know, they have been excluded from working upon Section "O" for a period of about eight months past. They submit to your Honorable Board that this is to them a great and unexpected hardship; they having in good faith contracted for the performance of said work between periods of time fixed in said contract, which periods indicate that it was the intention of all parties that the work would be continuous, or only interrupted by such reasonable delay as might be necessary to secure the right of way.

It is well known to the general public that the Sanitary District Board has the right of condemnation under the law, and it is reasonable to assume that they might have exercised such right and should have done so in such reasonable and expeditious manner as to avoid delay and damage to contractors. The public statements in the press of Chicago, credited to at least one of your Honorable Board, indicate a policy of delay and procrastination, that is, in our opinion, utterly at variance with the Board's plain obligation to us.

We further submit that we have had

a dredging plant that cost us \$200,000 lying idle for the past eight months, daily expecting that you would remove the obstacles to our work in the Main Channel, and that we have rested so long, hoping the promises of your individual members and officers would be carried out.

We therefore hereby notify your Honorable Board that we shall, at the proper time, present our claim for the unnecessary and unreasonable delay to which you have subjected us, and shall also hold you for the damages which we may sustain in the future by our enforced idleness, and we respectfully ask that you consider this matter at your earliest convenience, and inform us (as we have a right to be informed) what are your intentions and expectations on the matter of right of way on the Main Channel.

Yours truly,

(Signed) *Illinois Dredging Company,*

CHAS. FITZ-SIMONS,

President.

(Representing McMahon & Montgomery Company, Green's Dredging Company, Chicago Dredging and Dock Company, The Fitz-Simons & Connell Company.)

CLAIM FOR PAYMENT OF PREMIUM ON DESIGN FOR SWING BRIDGE.

The Clerk presented a communication, directed to President Wenter, from C. L. Strobel, accompanied by bill, being claim for payment of premium (\$750) on design for swing bridge submitted with bids for bridges and masonry at Romeo, Lemont and Willow Springs, presented and referred at the meeting held October 31, 1894, (page 2284 of the Proceedings), as set forth in the communication; and the communication was read.

Mr. Boldenweck, seconded by Mr. Kelly, moved that the communication be ordered printed, and, with enclosed bill, referred to the Committee on Finance.

The motion prevailed, and the communication was ordered printed, and, with enclosed bill, so referred.

The following is

THE COMMUNICATION;

"CHICAGO, July 12, 1895.

*Mr. Frank Wenter, President Board of
Trustees, Sanitary District, Rialto
Building, Chicago:*

DEAR SIR:—Enclosed please find my

bill for premium for design for swing bridges furnished October 31st, 1894, amounting to \$750.00.

This design was for three swing bridges and was submitted in response to advertisements published by the Board of Trustees of the Sanitary District for sixty days prior to that date. According to a condition of the specifications, the sum of \$750.00 was to be paid to the party furnishing the accepted design. By report of the Joint Committee of Engineering and Finance of your Board, dated December 19th, the design submitted by me was selected as "the most perfect and best adapted to the work required;" and the Committee recommended that the premium of \$750.00 be paid to me on filing said plans to the satisfaction of the Chief Engineer.

At the meeting of your Honorable Board on the same day, an opinion was read by the Attorney of the Board, stating that "after a consideration of the terms and specifications, and of the circumstances attendant upon the invitation for proposals, and the object to be attained by the District, I am of the opinion that the bidder who furnished the design which has been selected by the Chief Engineer as the design which seemed to him the most perfect and best adapted to the work, has a right to the award offered, which he would stand a good chance of being able to enforce, and that the sum promised as an award should be paid him."

The motion to concur in the recommendations of the Joint Committee on Finance and Engineering was lost by a vote of four in favor to three against it.

I now write to formally present my claim for \$750.00, the amount of the premium, and respectfully ask for its favorable consideration. I have been waiting in the expectation that this matter would be taken up voluntarily by your Honorable Board, but, no doubt, press of business has caused the matter to be overlooked.

It seems to me that there can be no question that this claim is a fair one and ought to be paid. The fact that these swing bridges are not to be built can have no weight in the matter, for it would be equally just on your part to decline to pay the bills for printing incurred in connection with the publication of the advertisements.

I remain yours truly,

(Signed) C. L. STROBEL."

(Accompanied by bill \$750.00.)

ADJOURNMENT.

On motion of Mr. Boldenweck, seconded by Mr. Kelly, the Board then adjourned to meet Thursday, August 1, 1895, at 2 o'clock P. M., pursuant to motion.

THOS. F. JUDGE,

Clerk.

ADJOURNED MEETING.

The adjourned session of the two hundred and seventy-eighth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Thursday, August 1, 1895, at 2 o'clock P. M., pursuant to motion.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wenter—six (6), and subsequently Mr. Cooley, making a total of seven (7) members, were present.

VOUCHERS.

The Clerk presented the following vouchers:

PAY ROLLS.

Eng. Dept., Chief En-

gineer's roll (July, 1895).....	\$1,441 67
Eng. Dept., Division of Construction (July, 1895).....	5,548 28
Eng. Dept., Division of Drafting and Designing (July, 1895).....	2,875 30
Eng. Dept., Division of Records (July, 1895).....	882 50
Eng. Dept., Special Service roll (July, 1895).....	5,191 59
Eng. Dept., Discharged Men's roll (July, 1895).....	73 68
	<hr/> \$16,013 02
Clerical Dept., Clerk's roll (July, 1895).....	891 67
Law Dept., Attorney's roll (July, 1895).....	\$1,288 34

Law Dept., Joliet roll, (July, 1895).....	\$ 458 33	\$1,746 67
Treasury Dept., Treas- urer's roll (July, '95)		166 67
General Account, Gen- eral roll (July, '95)	\$ 250 00	
General Account, Tow- path roll (July, '95)	246 50	
General Account, Trus- tees' roll (July, '95)	2,333 33	2,829 83
Police Dept., Marshal's roll (July, 1895).....		3,834 15
Total.....		\$25,482 01

ENGINEERING DEPARTMENT.

Isham Randolph (post- age stamps).....	\$ 24 00	
R. B. Seymour (Special Engineer — Services Re-Measurement Main Channel).....	300 00	
R. B. Seymour (travel- ing).....	8 60	
Isham Randolph (travel- ing).....	200 40	\$ 533 00

LAW DEPARTMENT.

Jos. Donnersberger, (Expert—right of way services, July, 1895)	300 00
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GENERAL ACCOUNT.

Chicago Telephone Co. (telephone service, Chicago to Lockport, July to October, 1895)	764 17
Wagner Bros. (livery).	9 00
Marshall Field & Co. (window shade).....	3 02
	776 19
Grand total.....	\$27,091 20

Mr. Boldenweck, seconded by Mr. Russell, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

TEMPORARY BRIDGE AND ROADWAY AT
WESTERN AVENUE AND SOUTH-
WEST BOULEVARD.

The Clerk presented a report from the Chief Engineer, with reference to the temporary bridge and roadway at Western Avenue and the Southwest Boulevard, and asking an appropriation of \$2,500 for said work, as provided in the report; and the report was read.

Mr. Boldenweck, seconded by Mr. Kelly, moved that the report be ordered printed and referred to the Joint Committee on Engineering and Finance, with power to act.

On roll call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, and the report ordered printed and referred to the Joint Committee on Engineering and Finance, with power to act.

The following is

THE REPORT:

“CHICAGO, Aug. 1, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Having procured the ordinances for crossing the Boulevard and Western avenue we have begun making the approaches provided for in these ordinances and are also making preparations for the temporary bridge and roadway. As explained to those of you who were on the ground yesterday it will first be necessary to provide a road to the west of Western avenue for traffic while the dredges are cutting through the avenue. As soon as this cut is made the bridge will be erected in the rear of the dredge on the east of the avenue and traffic thrown on the road thus provided. To accomplish all this means an expenditure of about \$2,500, as stone will have to be purchased for macadamizing the temporary roads herein described and material purchased for the bridge, and labor paid for in connection with its erection.

I have several propositions for stone for macadam, the lowest being \$1.30 per cubic yard delivered on the work. As this is a matter of the greatest importance I would ask your authority to proceed with the

work and get it done upon the most economical basis possible.

Respectfully submitted,
(Signed) ISHAM RANDOLPH,
Chief Engineer."

ASSIGNMENT OF POWER OF DISTRICT TO
COLLECT RENT ON "DAGGETT"
LANDS.

The Clerk presented a report from the Attorney, with reference to the collection, by the heirs of the "Daggett Estate," of certain rents on land purchased from the said estate, as set forth in the report, said report being accompanied by an order authorizing and directing the President and Clerk to execute, on behalf of the District, an assignment of the District's power to collect said rents to Belle F. Boehme and Clara P. Mayo, as provided therein; and the report and order were read.

Mr. Eckhart, seconded by Mr. Russell, moved that the report be ordered printed and placed on file, and the accompanying order adopted.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed and placed on file, the accompanying order adopted, and the President and Clerk authorized and directed as provided therein.

The following is

THE REPORT AND ACCOMPANYING
ORDER:

"CHICAGO, Aug. 1, 1895.

*To the Honorable, the Board of Trustees
of the Sanitary District of Chicago;*

GENTLEMEN—In April, 1894, negotiations were entered into with Belle F. Boehme and Clara P. Mayo for the purchase, by the District, of lands in Will County owned by them as heirs of the Daggett estate. As part of the consideration agreed to be paid by the Sanitary District for said lands, representatives of the District agreed that the grantors should have the right to collect rents from the then tenants for the year ending March 1, 1895. The deeds conveying said lands to the Sanitary District are dated May 15th, 1894. Said grantors in attempting to collect the rent due have been met by refusal on the part of the tenant and by the objection,

when suit was brought to recover, that said grantors had conveyed all their interests and were not entitled to collect rents. In the absence of any written agreement outside of the deeds of conveyance, the right to payment from the tenant for use and occupation of the land went to the Sanitary District.

The Daggett heirs request that the District's right to collect for such use and occupation from May 15th to March 1st, 1895, be formally assigned to them. As there seems no doubt as to the terms of the original negotiations for the purchase of these lands, I can see no reason why the District should not do what may be necessary in order that these terms may be carried out in their spirit, and assign its claim against J. P. Kellogg, the tenant in question for use and occupation of said land up to March 1, 1895, as requested.

Respectfully submitted,
(Signed) GEO. E. DAWSON,
Attorney."

The following is

THE ORDER:

"*Ordered*, That the Attorney prepare an assignment by the Sanitary District to Belle F. Boehme and Clara B. Mayo of its claim against J. P. Kellogg for the use and occupation of the land known as the Daggett land from May 15, 1894, to March 1, 1895, and that the President and Clerk execute said assignment on the part of the District."

REPORT ON COMMUNICATION FROM MAYOR
OF CHICAGO ON COMPLETION OF MAIN
CHANNEL AND ADJUNCTS.

Mr. Eckhart, for the Joint Committee on Engineering and Finance, presented a report from that Committee, (accompanied by opinions from the Attorney and General Counsel) with reference to and returning the message of the President and communication from Mr. Geo. B. Swift, Mayor of Chicago, requesting information with reference to the completion of the Main Channel and adjuncts thereto, presented and referred to that Committee at the meeting held July 24, 1895 (page 2739 of the Proceedings); and the report and accompanying opinions were read.

Mr. Boldenweck, seconded by Mr. Eckhart, moved that the report be adopted,

with accompanying opinions, ordered printed and, with all enclosures, placed on file, and the Clerk directed to transmit to the Mayor of Chicago copies of the report and opinions.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wenter—six (6). Excused and not voting—Mr. Cooley—one (1). Nays—None.

Upon which result the President declared the motion carried, the report adopted, with accompanying opinions, ordered printed and, with all enclosures, placed on file, and the Clerk directed to transmit to the Mayor of Chicago copy of the report and opinions.

The following is

THE REPORT, WITH ACCOMPANYING
OPINIONS:

“CHICAGO, Aug. 1, 1895.

*To the Honorable the Board of Trustees of
the Sanitary District of Chicago:*

GENTLEMEN—In accordance with the directions of your Honorable Body we have considered the communication of the Mayor of Chicago to the President and Board of Trustees of this District and beg leave to report thereon as follows: The substance of the letter is summarized by him in the three questions:

When may the completion of the Main Drainage Channel be reasonably expected?

How soon thereafter may the city reasonably expect the completion of the adjuncts—intercepting sewers or reversal of grade of the lake-emptying sewers—so that the sewage pollution of our water supply may cease?

Is there any reason why work should not be begun on the necessary adjuncts and progress simultaneously with the construction of the Main Channel, so that when this latter is completed Chicago may at once have the full measure of relief for which the city is now being taxed?

The question of the exclusion of sewage from the lake and the best means of securing it was considered at length by the Board of Trustees as far back as 1892, in connection with the general question of temporary sanitary relief for the city pending the construction of the Sanitary District Channel and an exhaustive report thereon was made by the Joint Committee

on Engineering and Finance. (See Proceedings page 792-804). Since that time this District by means of the River Diversion of the Desplaines and the Spillway at Summit has greatly lessened the danger of the scouring out of the river during floods and the carrying of sewage into dangerous proximity to the water intakes.

In regard to the second question of the Mayor “How soon after the completion of the Main Drainage Channel may the city reasonably expect the completion of the adjuncts—intercepting sewers or reversal of grade of the lake-emptying sewers—so that sewage pollution of our water supply may cease?” we would refer to the opinion of our General Counsel and Attorney which is herewith transmitted.

It will be observed that the words “adjuncts and additions” as interpreted by them refer to such adjuncts and additions in connection with Main Channels or outlets as will enable the latter to serve their purpose as outlets and to carry the quantity of water required by the Act.

As to when the completion of the Main Drainage Channel may reasonably be expected there can be little doubt that it will be completed by the autumn of 1897. Many sections will be finished within a couple of months and nearly sixty per cent of the work under contract is already completed.

The third question, so far as it relates to the carrying on of the construction of intercepting sewers and the reversal of the grade of sewers, has already been answered. Were the question of the powers and duties of the Sanitary District with relation thereto less clear than they are, it would still be impossible for this District at this time, or at any time up to the completion of its present work, to enter upon the construction of intercepting sewers for the reason that all the funds available, either through the issue of bonds or by general taxation, are already anticipated by the work now under contract for the completion of the Main Channel and by what remains to do before the water can be let into the Channel.

In conclusion we may say that this District will at all times cheerfully co-operate with the city to the extent of its legal powers in any measure which will better the sanitary condition of the city, and is much gratified to receive the assurance

that this administration is looking forward to making the outlet to be provided by the District of the greatest possible benefit to the community, and that it will take the necessary measures to secure that end.

Respectfully submitted,

(Signed) B. A. ECKHART,
THOMAS KELLY,
JOHN J. ALTPETER,
WM. BOLDENWECK,
W. H. RUSSELL.

Joint Committee on Engineering and Finance."

The following are

THE OPINIONS:

"CHICAGO, Aug. 1, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In accordance with the action of your Honorable Body at its meeting of July 24, 1895, directing the General Counsel and myself to consider the extent of the powers of the District under the Sanitary District Act with regard to the construction of intercepting sewers and the changing of grade of sewers and to render an opinion thereon, we have given the matter careful consideration and I transmit herewith the conclusions of the General Counsel, in which I fully concur.

Respectfully submitted,

(Signed) GEO. E. DAWSON,
Attorney,"

"CHICAGO, July 26, 1895.

The Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have considered the question submitted as to what are the powers and duties of the Sanitary District of Chicago under the act creating the same, in relation to the construction of intercepting sewers in the City of Chicago, for the purpose of preventing the discharge of sewage through sewers constructed by the City of Chicago, into Lake Michigan, and beg leave to report my conclusions in regard thereto as follows:

By Section 7 of the act creating the District it is provided that "The Board of

"Trustees of any Sanitary District organized under this Act shall have power "to provide for the drainage of such district by laying out, establishing, constructing and maintaining one or more "main channels, drains, ditches and outlets for carrying off and disposing of the "drainage, including the sewage of such "district, together with such adjuncts and "additions thereto as may be necessary or "proper to cause such channels or outlets "to accomplish the end for which they "are designed, in a satisfactory manner. " * * * Such channels or outlets may be extended outside of the territory included within such Sanitary Districts," etc.

In my opinion it is clear, from the entire Act creating the Sanitary District, that the object of its creation was to construct and maintain an outlet for the drainage (including the sewage) of the District, and that in construing the particular provisions of the act this fact is to be borne in mind. The Sanitary District of Chicago has located, and has now in process of construction, the Main Channel or outlet for the drainage of the Sanitary District, and it has power, under the provision of Section 7 above quoted, to construct and maintain such Channel or outlet, and such adjuncts and additions thereto, as may be necessary or proper to cause such Main Channel to accomplish the end for which it was designed in a satisfactory manner. The end for which such Main Channel was designed was to afford an outlet for the drainage and sewage of the District, and to accomplish that end in a satisfactory manner it is necessary that a continuous flow of water through such Channel away from Lake Michigan should be maintained. Certain adjuncts and additions to the Main Channel are necessary to the accomplishment of that end, such as the River Diversion Channel, and such other constructions and works as may be necessary to produce a continuous flow of water from Lake Michigan through such Channel. Whatever adjuncts and additions are necessary to produce this continuous flow of water from Lake Michigan through the Channel, come clearly within the provisions of the Act and within the powers of the Board of Trustees of the Sanitary District.

The question is now presented whether

a broader construction can be given to the provisions in said Section 7 above quoted, and to the extent of conferring upon the Sanitary District the power of constructing sewers in the City of Chicago for the purpose of collecting the sewage of the city and emptying the same into this Channel, or the Chicago River, through which the water flowing through the Channel will pass in whole or in part. Such intercepting sewers would of necessity form a part of the sewerage system of the City of Chicago. Presumably they would be constructed in the streets of the City of Chicago, which are owned by and under the exclusive control of the City of Chicago. By its charter the City of Chicago is given full and complete control over the streets of the city, and also authority to construct and keep in repair the sewers, tunnels and drains therein. The Act creating the Sanitary District is a special act, and could not therefore amend or alter the charter of the City of Chicago, as Section 22 of Article 4 of the Constitution prohibits the changing or amending the charter of any town, city or village by any local or special law. It therefore follows that the control of the City of Chicago over its system of sewers, and its power over its streets in relation thereto, including intercepting sewers, is wholly unaffected by the Act creating the Sanitary District. The Sanitary District would, therefore, have no power to enter upon any street of the City of Chicago for the purpose of constructing an intercepting sewer, or in any way to interfere or intermeddle with any of the sewers of the city, except by permission of the city, even if the Act creating the Sanitary District should be construed to empower the Sanitary District to construct such intercepting sewers. It does not seem to me that intercepting sewers are necessary to cause the Main Channel to accomplish the object for which it was

designed, namely: to afford an outlet for the drainage of the Sanitary District. When the Main Channel is complete and a flow of water through the same is maintained, as provided in the Act creating the Sanitary District, an outlet will be furnished capable of carrying off and disposing of the drainage of the District in a satisfactory manner. Of course this outlet or channel will not carry off the sewage of the city or Sanitary District, unless the city shall so construct its system of sewers as to conduct and empty the sewage into this channel or outlet. If a broader construction is given to the powers of the District, it might involve the construction by the Sanitary District of all sewers and drains required to secure the carrying off the sewage and drainage of the entire Sanitary District in a satisfactory manner. But this would require the doing of work over which the City of Chicago is vested with full power and discretion by its charter, which remains unaffected by the Act creating the Sanitary District. In my opinion, it is clear that the Sanitary District is not under any obligation to do more than to construct and maintain its Main Channel with such adjuncts as will cause the quantity of water described in the Act to pass through such Channel in the manner prescribed in said Act. Whether the City of Chicago will avail itself of such outlet is a matter which, in my opinion, does not fall within the jurisdiction or powers of the Sanitary District.

Yours very truly,

(Signed)

JOHN P. WILSON."

ADJOURNMENT.

On motion of Mr. Eckhart, seconded by Mr. Boldenweck, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

August 1,]

—2763—

[1895.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

AUGUST 14, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and seventy-ninth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, August 14, 1895, at 2 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wenter—six (6) members, were present.

MINUTES.

The minutes of the regular meeting held July 24, 1895, and of the adjourned session of the same regular meeting held August 1, 1895, were approved as printed, on motion of Mr. Boldenweck, seconded by Mr. Russell.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

<i>Construction Account—</i>	
Griffiths & McDermott, (Sec. 1, Aug. 1, 1895).....	\$ 18,077 93
McArthur Brothers, (Sec. 2, Aug. 1, 1895) ..	19,503 75
Gilman & Company, (Sec. 3, Aug. 1, 1895) ..	20,971 13
McArthur Brothers, (Sec. 4, Aug. 1, 1895) ..	14,613 38
The Qualey Construction Co., (Sec. 5, Aug. 1, 1895).....	15,995 43

CLAUSE "J"	
Total Retained.	Amount released on this Voucher.
\$15,170 13	
1,242 00	\$ 571 00
7,371 00	270 00

CLAUSE "J"
Total
Retained. Amount re-
leased on
this Voucher.

Mason, Hoge & Company, (Sec. 6, Aug. 1, 1895).....	\$14,106 31	\$ 1,350 00	\$ 324 00
Mason, Hoge & Company, (Sec. 7, Aug. 1, 1895).....	17,168 37		
Mason, Hoge, King & Co., (Sec. 8, Aug. 1, 1895).....	18,646 47		
Halvorson, Richards & Co., (Sec. 9, Aug. 1, 1895).....	16,014 42		
E. D. Smith & Co., (Sec. 10, Aug. 1, 1895)	12,250 00		
Mason, Hoge & Company, (Sec. 11, Aug. 1, 1895).....	14,215 47		
Mason, Hoge & Company, (Sec. 12, Aug. 1, 1895).....	15,494 72		
Mason, Hoge & Company, (Sec. 13, Aug. 1, 1895).....	3,545 06		
Smith & Eastman, (Sec. 14, Aug. 1, 1895)	22,356 25		
Wright, Meysenburg, Sinclair & Carry, (Sec. 15, Aug. 1, 1895).....	10,944 50		
Heldmaier & Neu, (Sec. A, Aug. 1, 1895)	3,818 55	25,935 39	107 19
Heldmaier & Neu, (Sec. B, Aug. 1, 1895)	7,080 18	11,548 17	733 05
Western Dredging & Improvement Co., (Sec. C, Aug. 1, 1895).....	5,469 62		
E. D. Smith & Co., (Sec. D, Aug. 1, 1895)	8,281 55		
Angus & Gindele, (Sec. E, Aug. 1, 1895)	5,684 17	3,996 00	
Weir, McKechney & Co., (Sec. F, Aug. 1, 1895).....	3,174 94		
Gahan & Byrne, (Sec. G, Aug. 1, 1895)...	6,596 13	9,982 56	825 44
Gahan & Byrne, (Sec. H, Aug. 1, 1895)...	10,493 07	6,159 31	
Christie & Lowe, (Sec. I, Aug. 1, 1895)...	8,203 13	325 00	175 00
Christie & Lowe, (Sec. K, Aug. 1, 1895)...	7,634 38	2,275 00	500 00
The Heidenreich Company, (Sec. L, Aug. 1, 1895).....	6,593 51	4,357 64	1,491 29
The Heidenreich Company, (Sec. M, Aug. 1, 1895).....	3,480 41	3,335 29	679 21
Hayes Bros. et al., (Sec. N, Aug. 1, 1895)	1,956 15	2,088 40	
McMahon & Montgomery Co. et al. (Sec. O, Aug. 1, 1895).....	2,727 55	2,204 45	
Mason, Hoge & Co., (Sec. 6, Extra—Special work, retaining embankment, repairing and raising levee, Aug. 1, 1895).....	375 00		
Mason, Hoge & Co., (Sec. 7, Extra work—Dimension stone, rip-rap work, earth core and embankment, Aug. 1, 1895).. <hr/>	389 00		
Total.....		\$315,865 53	

ENGINEERING DEPARTMENT.

The Tobey Furniture Co., (furniture)...	\$ 8 00
Rand, McNally & Co., (lake charts).....	3 00
Rufus Blanchard, (maps).....	1 50
F. Mayer & Co., (blue prints).....	17 29
Seelig & Kandler, (repairing instruments).....	18 10

Orne Electric Construction Company, (repairing buzzers).....	\$ 2 45	
John Larney, (teaming).....	28 00	
Soper Lumber Co., (pine stakes).....	10 00	
Chicago Blue Print Paper Co., (photo supplies).....	3 84	
Walmsley, Fuller & Co., (photo supplies)	23 85	
Treleaven Optical Co., (photo supplies)..	1 75	
Fuller & Fuller Co., (photo supplies)....	1 75	
W. A. Olmsted, (mounting photos).....	2 55	
Chicago Towel Supply Co., (toweling)...	5 40	
Waukesha Hygeia Mineral Springs Com- pany, (water).....	22 50	
C. S. Austin, (ice).....	12 00	
John McCaffery, (rent—Brighton Park, July, 1895).....	25 00	
Frank S. Amick, Agent, (rent—Corwith, July, 1895).....	15 00	
J. M. Abbitt, (rent—Willow Springs, July, 1895).....	20 00	
H. S. Norton, (rent, Lemont, July, 1895)	18 00	
O. W. Moon, (rent—Lockport, July, 1895).....	20 00	
C. B. Brainard, (gauge reading, July, 1895).....	10 00	
E. Hastings, (gauge reading, July, 1895).....	10 00	
Wm. Kirkham, (gauge reading, July, 1895).....	10 00	
Wm. McGinnis, (gauge reading, July, 1895).....	10 00	
Mary Rusk, (gauge reading, July, 1895)..	10 00	
H. B. Alexander, (traveling).....	18 11	
H. A. Miller, (traveling).....	47 93	
Wm. Trinkaus, (expense).....	30 42	
		\$ 406 44

CLERICAL DEPARTMENT.

Waukesha Hygeia Mineral Springs Co., (water).....	\$ 3 75	
Warner's Towel Supply, (toweling).....	2 00	
C. S. Austin, (ice).....	3 00	
		\$ 8 75

LAW DEPARTMENT.

Bradner Smith & Co., (stationery).....	\$ 11 00	
Callaghan & Co., (court reports).....	5 75	
The <i>Joliet Times</i> , (advertising).....	25 00	
Chicago Telephone Co., (toll service)....	18 55	
Warner's Towel Supply, (toweling).....	1 50	
C. S. Austin, (ice).....	3 00	
		\$ 64 80

GENERAL ACCOUNT.

The <i>Chicago Chronicle</i> Company, (ad- vertising appropriation and tax levy ordinances)	\$ 11 20
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W. R. Stubbs, (luncheon).....	\$ 125 00
John F. Higgins, (printing proceedings, etc., July, 1895).....	306 23
	\$ 442 43

POLICE DEPARTMENT.

McArthur Brothers Co. (horse shoeing). \$	12 81
Ryan & Hart, (stationery).....	8 20
	\$ 21 01
Grand total.....	\$316,808 96

Mr. Boldenweck, seconded by Mr. Russell, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Kelly (*except as to vouchers for C. B. Brainard, E. Hastings, Wm. Kirkham, Wm. McGinnis and Mary Rusk, \$10.00 each, for guage reading, on which he voted "No,"*), Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the Rules, showing the number of persons in the employ of the District for the weeks ending July 27, August 3 and August 10, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, Aug. 14, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the weeks ending July 27, August 3 and August 10, 1895, as the same have been reported to me:

	WEEKS ENDING		
	July 27, 1895.	Aug. 3, 1895.	Aug. 10, 1895.
Engineering Dept..	165	167	166
Clerical Dept.....	4	4	4
Law Dept.....	7	7	7
Treasury Dept.....	1	1	1
Police Dept.....	48	48	48
Telephone Op'r....	1	1	1
Towpath Force....	2	2	2
Total employes..	228	230	229

Respectfully submitted,
(Signed) THOS. F. JUDGE,
Clerk."

MONTHLY REPORT FROM CLERICAL DEPARTMENT.

The Clerk presented a report from the Clerical Department for the month of July, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, August 14, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have the honor to herewith report that the total amount expended on account of and charged to the Clerical Department during the month of July, 1895, was \$896.67, divided as follows:

Salaries	\$891 67
General expenses.....	5 00
Total.....	\$896 67

There are no outstanding liabilities, and the expenses for the present month will, from present indications, be about \$950.

The total amount expended and charged to the General Account during the month of July, 1895, was \$4,849.50, divided as follows:

Salaries.....	\$2,752 34
Printing.....	131 87
Rent.....	1 875 00
General expenses.....	90 29

Total.....\$4,849 50

There are no outstanding liabilities

against the General Account, and the expenses for the present month will be about \$4,600.

During the month of July, 1895, there were warrants authorized and drawn against the various accounts for \$707,288.81, as follows:

Engineering Department.....	\$16,511 16
Clerical Department.....	896 67
Law Department.....	3,851 81
Treasury Department.....	166 67
General Account.....	4,849 50
Engineering Department (Construction Account).....	638 071 63
Law Department (Land Account)....	38,696 58
Police Department.....	4,244 79
Total.....	<u>\$707,288 81</u>

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

MONTHLY REPORT FROM LAW DEPARTMENT.

The Clerk presented a report from the Law Department for the month of July, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, Aug. 14, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I submit herewith the monthly report for July, 1895.

The total amount paid out by this Department during the month is as follows:

SALARIES.

Attorneys.....	\$1,366 68
Office force.....	255 00
	<u>\$1,621 68</u>

GENERAL EXPENSES.

Court costs.	\$ 521 03
Right of way.....	433 50
Expense account...	15 85
Legal services.....	1,250 00
Printing and stationery	9 75
	<u>\$2,230 13</u>

LAND ACCOUNT.

Right of way Du
Page County (be-

ing Moll et al.

Jdgt.).....	\$38,696 58
Will County*.....	2,690 00
	<u>\$41,386 58</u>
Total.....	<u>\$45,238 39</u>

(*The Will County land reported this month was acquired in June, and was, by inadvertance, omitted from the report for that month.)

By direction of your Honorable Body, I took under consideration what steps, if any, the Sanitary District might lawfully undertake to close such saloons as are being carried on without legal license, which are located within the police jurisdiction of the District, and made report thereon. I was then directed, in connection with the Marshal, to collect such evidence as we might be able to convict the keepers of illegal, unlawful or unlicensed saloons along the line of the Main Channel of the District, and to close up such saloons.

Pursuant to such orders informations were filed in the County Court against four keepers of saloons, three of whom were doing business outside the corporate limits of Spring Forest, but within two miles of said village, and the other within two miles of the limits of the Village of Summit. They had licenses illegally issued by the respective villages.

One case, *The People vs. Cantore*, was tried before a jury by Assistant Attorney, Mr. Thomas B. Lantry, but in spite of the fact that the circumstances constituting an illegal selling were not only proven, but also acknowledged by the defense, the jury returned a verdict of not guilty.

The other cases were continued for a short time, but owing to the vacation season it may become expedient to continue them to the next term of court.

The village authorities of both villages express their determination not to re-issue any licenses to saloons outside their limits.

Those issued by Spring Forest expire September 1st, and those of Summit November 1st next. Only one of the defendants in the cases still untied is doing business under a license from Summit.

I do not regard the acquittal of Cantore as of any moment in the final result, as all those who are selling liquors without legal license must close their places of business under the order passed by you.

In the matter of the suit of the Sanitary District vs. Carl Moll and John A. Lomax in which the amount found by the verdict and order of judgment had been deposited in the Joliet National Bank pending an appeal prayed for. The defendant, Carl Moll, abandoned appeal proceedings and withdrew the amount awarded pursuant to an order of the court. Defendant Lomax filed the necessary appeal bond within the time fixed by the court.

In connection with the General Counsel, the question as to the powers and duties of the Sanitary District under the act creating same in relation to the construction of intercepting sewers in the City of Chicago, for the purpose of preventing the discharge of sewage through sewers constructed by the City of Chicago into Lake Michigan was considered and an opinion rendered thereon.

For the coming month the saloon cases, possibly the condemnation suit for the remainder of the Sag Island land, railroad contracts and routine business will occupy the attention of the Department,

Respectfully submitted,

(Signed) GEO. E. DAWSON,
Attorney."

MONTHLY REPORT FROM TREASURY DEPARTMENT.

The Clerk presented a report from the Treasury Department for the month of July, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT :

"Balance on hand at date of last report.....	\$2,568,830.11
Received from County Treasurer, Sanitary District Tax Account. \$	50,000.00
Received from Thos. F. Judge, Clerk, for general account—rent of buildings, Section A, to Heldmaier & Neu.	95.00
Received from National Bank of Illinois, interest for July.	755.63
Received from American Trust and Savings Bank, interest for July.....	35.66
Received from Globe National Bank, interest for July.....	859.49

Received from Metropolitan National Bank, interest for July.....	\$ 695.49
Received from Chicago National Bank, interest for July.....	701.03
Received from Ft. Dearborn National Bank, interest for July.....	719.82
	<u>\$53,862.12</u>
Total cash received for month.....	\$2,622,692.23
Total cash disbursed during month as per annexed schedules, viz:	
Clerical Department....	\$ 896.67
Treasury Department..	166.67
Engineering Department.	16,577.60
Engineering—Construction—Department.....	747,141.31
Law Department.....	4,712.97
Law Department—Land Account.....	38,696.58
General Account.....	4,829.12
Police Department.....	4,263.39
	<u>\$817,284.31</u>
Balance this date, in banks as per schedule endorsed hereon	<u>\$1,805,407.92</u>

(Signed) MELVILLE E. STONE.
Treasurer.

CHICAGO, July 31, 1895."

SCHEDULE :

Fort Dearborn National Bank.....	\$376,122.03
National Bank of Illinois.....	376,962.61
Chicago National Bank.....	375,638.08
Metropolitan National Bank.....	378,859.95
American Trust and Savings Bank.	21,003.79
Globe National Bank.....	276,821.41
Total..	<u>\$1,805,407.92</u>

COMPLETION OF WORK ON VARIOUS ROCK SECTIONS.

The Clerk presented a report, addressed to President Wenter, from the Superintendent of Construction, with reference to the time of completion of the first and various other rock sections on the Main Channel.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, Aug. 14, 1895.

Mr. Frank Wenter, President of Sanitary District of Chicago:

DEAR SIR—In response to your inquiry

as to the date upon which the rock Section No. 10, at the Cook-Will County line, the point at which the work was formally opened September 3d, 1892, will be completed, I beg to say that the contractors, E. D. Smith & Co., expect to finish the excavation by the 1st of September, and, considering their past rate of progress, should be able to do so.

The excavation on Section 13 (Mason, Hoge & Co.) was practically completed on the 3d of July last, two years seven months and six days from the date of commencement.

All of the rock sections between Le-mont and Romeo will undoubtedly be finished on or before the 1st of November, and fourteen sections completed during the current year, comprising, together with the amount done on the remaining sections, fully 80 per cent of the entire work of excavation.

Very respectfully,

(Signed) U. W. WESTON,

Supt. of Construction."

ACCEPTANCE OF ORDINANCE FOR MAIN
CHANNEL CROSSING AND BRIDGE AT
WESTERN AVENUE.

Mr. Eckhart, for the Joint Committee on Engineering and Finance, presented a report from that Committee, transmitting copy of City ordinance granting permission to the District to excavate and bridge the Main Channel across Western avenue, and also a resolution accepting said ordinance on behalf of the District, and returning for filing report and communication on the same matter previously referred; and the report, ordinance and resolution were read.

Mr. Eckhart, seconded by Mr. Kelly, moved that the report be adopted, with accompanying ordinance, ordered printed and with all enclosures placed on file, and the accompanying resolution passed.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the report adopted, with accompanying ordinance, ordered printed, and, with all enclosures,

placed on file, and the accompanying resolution passed.

The following is

THE REPORT WITH ACCOMPANYING
ORDINANCE AND RESOLUTION:

"CHICAGO, Aug. 14, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In our report upon Southwest Boulevard and Western avenue crossings (Proceedings page 2661) we stated that an ordinance had been introduced into the City Council providing for the crossing of Western avenue and referred to a Committee.

An ordinance reported by said Committee was passed by the City Council at its meeting of July 11, 1895. Since the ordinance provides that it shall take effect upon the passage of a resolution by the District accepting the provisions and agreeing to comply with the conditions of the same, we transmit herewith such a resolution and recommend its passage by your Honorable Body.

We also transmit a copy of the ordinance that same may be printed in the Proceedings.

We return for filing the report of the Chief Engineer and papers connected therewith, upon which our action has been based.

Respectfully submitted,

(Signed) B. A. ECKHART,
WM. BOLDENWECK,
THOMAS KELLY,
W. H. RUSSELL.
JOHN J. ALTPETER,

Joint Committee on Engineering and Finance."

(Accompanied by ordinance, resolution, report and communication.)

THE ORDINANCE:

"An ordinance granting permission to the Sanitary District of Chicago to excavate its Main Drainage Channel across Western avenue.

Be it ordained by the City Council of the City of Chicago:

SECTION 1. That permission is hereby given and granted to the Sanitary District of Chicago to excavate its Main Drainage Channel across Western avenue to a width of 133.26 feet at bottom, with

side slopes of two (2) feet horizontal, to one (1) foot vertical, and the center line of said channel to cross the center line of said Western avenue (the same being the range line between Ranges thirteen (13) and fourteen (14) East of the Third Principal Meridian, in Cook County), about seventy-nine (79) feet north of the intersection of the said center line of Western avenue and the center line of Thirty-first street.

SEC. 2. Said Sanitary District may cause to be cut across said Western avenue at once a channel sixty (60) feet wide, so as to give access to excavation to the west of said avenue while the abutments to the permanent bridge provided for in Section 3 hereof are being constructed; *provided*, that a temporary roadway suitable for heavy traffic shall first have been constructed to the west of said avenue to accomodate travel while said channel is being so excavated, and that after such excavation said channel shall be spanned by a pontoon or other temporary bridge of such construction as to meet the requirements of traffic on said avenue until said permanent bridge has been provided in the line of Western avenue.

SEC. 3. Said Sanitary District shall construct in the line of said Western avenue, over the channel provided for in Section 1, a fixed bridge not less than two hundred and fifty (250) nor more than three hundred (300) feet in length. The lowest projection of iron work on said bridge shall not be less than twenty-two (22) feet above datum, and the grades of the approaches thereto shall not exceed one foot in twenty-five feet. The trusses and floor system shall be proportioned for a live load of one hundred (100) pounds per square foot, in addition to the weight of the iron in the structure and the weight of the floor. The quality of the material used in the said bridge and the tensile and compressive strains thereof shall conform to the specifications in use by the City of Chicago for metallic bridge structures. Said bridge shall have sufficient width for and shall provide two roadways, each eighteen feet in width in the clear, with head-room not less than fourteen (14) feet.

Provided, however, that the plans and specifications for said bridge shall be first submitted to and be approved by the Department of Public Works, and that the construction of said bridge, and all the acts provided for by this ordinance, shall be under the supervision

and direction of the Commissioner of Public Works.

And provided further, that the said Sanitary District of Chicago, and its successors, shall indemnify and save harmless the City of Chicago of and from any and all damages of every kind for which it may become liable through or by reason of the acts by this ordinance authorized, or in the maintenance of the bridge hereby granted.

The cost of constructing said bridge, and of all repairs thereof, together with the expenses of maintaining and caring for the same, and the cost of building an approach to each end of said bridge from the level at the established grade of said street, and the cost of paving said approaches and keeping the same in good repair, shall be wholly paid by said Sanitary District. The grade of said approaches to be one foot in twenty-five feet. *Provided*, however, and the rights and privileges in this ordinance enumerated, are granted upon the express condition that the City of Chicago may at any time require any change in said bridge or in the approaches thereto, that the needs or convenience of the public may require, and the cost or expense of the same shall be paid for by said Sanitary District; and upon the further express condition that whenever the channel of said canal shall be enlarged so as to be capable of being used for navigation, the said Sanitary District shall substitute and pay for a swing or lift bridge, in place of the bridge herein provided for, which shall be constructed on such plan and in such manner as the City of Chicago shall direct, and shall thereafter be maintained and operated at the expense of said Sanitary District; and nothing herein contained shall be construed in any manner to release the control and authority over any part of said Western avenue vested in said city under any law defining the powers of municipalities over streets.

SEC. 4. This ordinance shall take effect upon the passage of a resolution by said Sanitary District accepting the provisions and agreeing to comply with the conditions of the same."

THE RESOLUTION:

"WHEREAS, On the 11th day of July A. D. 1895, the City Council of the City of Chicago passed an ordinance entitled, "An ordinance granting permission to the Sanitary District of Chicago to ex-

cavate its Main Drainage Channel across Western avenue; and

WHEREAS, In and by said ordinance it was provided that said ordinance should take effect upon the passage of a resolution by the Sanitary District accepting the provisions and agreeing to comply with the conditions of the same; therefore, be it

Resolved, That the Sanitary District of Chicago does hereby accept the ordinance of the City of Chicago, passed by the City Council of said city on the 11th day of July A. D. 1895, entitled, "An ordinance granting permission to the Sanitary District of Chicago to excavate its Main Drainage Channel across Western avenue," and agrees on its part to perform all the conditions therein required of it."

ADJOURNMENT TO SPECIAL TIME.

Mr. Eckhart, seconded by Mr. Bolden-

weck, moved that when the Board adjourn it do adjourn to meet Wednesday, August 21, 1895, at 2 o'clock P. M.

The motion prevailed unanimously, and it was so ordered.

INSPECTION OF MAIN CHANNEL BY BOARD
OF UNITED STATES ENGINEERS.

The President announced that on invitation the Board of United States Engineers appointed to report on the effect of the Main Channel on the levels of the Lakes had inspected the Main Channel.

ADJOURNMENT.

On motion of Mr. Kelly, seconded by Mr. Altpeter, the Board then adjourned to meet Wednesday, August 21, 1895, at 2 o'clock P. M., pursuant to motion.

THOS. F. JUDGE,

Clerk.

August 14,]

—2773—

[1895.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

AUGUST 21, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

ADJOURNED MEETING.

The adjourned session of the two hundred and seventy-ninth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, August 21, 1895, at 2 o'clock P. M., pursuant to motion.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, and Wenter—seven (7) members, were present.

PLANS FOR IMPROVEMENT OF CHICAGO RIVER.

The Clerk presented a report from the Chief Engineer, with reference to plans

for the improvement of the Chicago River, with a view to increasing the present flowage capacity thereof; and the report was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the report be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the report was ordered printed and so referred.

The following is

THE REPORT:

"CHICAGO, Aug. 15, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—The notes of the Chicago River surveys have been carefully platted, and cross-sections made from the soundings. From the data thus afforded computations have been made which determine the present flowage capacity of

the river, and a project has been formulated for increasing that flow to meet the requirements of the Sanitary District. In its present condition the flow which the river would furnish to our channel would be about 150,000 cubic feet per minute, but it is entirely practicable to increase this flow to double that amount without detriment to river navigation, for an outlay which cannot be considered extravagant. To accomplish this involves deepening the channel and reversing its slopes, widening it in places by setting back the dock lines; replacing some bridges with new structures of greater span, and where this is not practicable—as in the cases of the Adams Street, Jackson Street, Metropolitan L, and the Van Buren Street bridges—by-passes can be constructed which will supply the requisite channel capacity. It is proposed to dredge the river so that the mid-channel depth shall be 20 feet, the depth at dock lines to be 12 feet, and the slope from dock line to maximum depth to be 1 foot vertical to 5 feet horizontal, or 8 feet in 40 feet.

The dredging necessary to carry out this project will cost about.....	\$250,000 00
The by-passes for complete scheme	450,000 00
Bridge changes.....	85,000 00
Dockage, etc.....	87,500 00
Total.....	<u>\$872,500 00</u>

The by-passes contemplated in this project would be almost wholly on the property of the railroad companies, but the proposition is to floor the by-pass channel over in such a way as to make the area available for the uses to which it is now devoted by the owners, subjecting them to no inconvenience further than the temporary interruption which these building operations would occasion.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

AGREEMENT WITH ELGIN, JOLIET AND EASTERN RAILWAY CO. FOR BRIDGE AND CROSSING BELOW LOCKPORT.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, accompanied by agreement, in duplicate, with the Elgin, Joliet and Eastern Railway Company for bridge and crossing of right of way of said Company below Lockport, and recommending that the President and Clerk be authorized and directed to execute

said agreement, on behalf of the District, as provided in the report; and the report was read.

Mr. Cooley, seconded by Mr. Boldenweck, moved that the report be adopted, with accompanying agreement, ordered printed and placed on file, the recommendations made in the report concurred in, and the President and Clerk authorized and directed to execute said agreement, on behalf of the District, as provided in the report.

On roll call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted, with accompanying agreement, ordered printed and placed on file, the recommendations made in the report concurred in, and the President and Clerk authorized and directed to execute said agreement, on behalf of the District, as provided in the report.

The following is

THE REPORT, WITH ACCOMPANYING AGREEMENT:

"CHICAGO, August 21, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The Joint Committee on Engineering and Finance have for some time had under consideration the matter of securing from the Elgin, Joliet and Eastern Railway Company a small strip of land adjoining their right of way, the abandonment by them of that portion of the Joliet, Aurora and Northern Railroad tracks and right of way lying east of the new right of way of the Chicago, Santa Fe and California Railway Company, and the right to cause water to flow over a portion of the right of way of said Elgin, Joliet and Eastern Railway Company, where the track is carried upon an elevated trestle work.

The terms of an agreement securing these ends have been reached upon a basis satisfactory to the District. When negotiations were begun with said company it was contemplated that such work as was to be done by the Sanitary District would be completed this season. If this had been done it would have obviated the necessity of repairs by the railway company to certain portions of the trestle work. The Sanitary District, in consideration of its being allowed to postpone the completion

of the work undertaken by it until next season, has agreed to pay the actual cost of temporary repairs meanwhile, not however, to exceed the sum of two thousand (\$2,000) dollars.

This right of way and trestle work of the railway company is below Lockport, and nearly three miles beyond the end of our main channel. The necessity for the agreement is to avoid the paying of damages which might arise from the increased flow of water caused by the District.

We transmit herewith copies in duplicate of said agreement, and recommend that the President and Clerk be authorized and directed to execute same on the part of the District.

Respectfully submitted,

(Signed)

L. E. COOLEY,

Chairman.

B. A. ECKHART,

WM. BOLDENWECK.

THOMAS KELLY,

JOHN J. ALTPETER,

Joint Committee on Engineering and Finance."

(Accompanied by agreement in duplicate.)

THE AGREEMENT:

"*This Agreement, Made this day of A. D., 1895, by and between the Sanitary District of Chicago, a corporation under the laws of the State of Illinois, (hereinafter called "said District") party of the first part, and the Elgin, Joliet and Eastern Railway Company (hereinafter called "said company"), party of the second part; Witnesseth, that*

WHEREAS, Said District, in the prosecution of the work of constructing a drainage channel and waterway connecting the waters of Lake Michigan with the Desplaines River, for which it was organized, finds it necessary to cause an increased flowage of water over and upon that portion of the lands of said company in the southwest quarter (S. W. $\frac{1}{4}$) of Section thirty-four (34), Township thirty-six (36) North, Range ten (10) East of the Third Principal Meridian in Will County, Illinois, which lies Easterly of the "new right of way" of the Chicago, Santa Fe and Cali-

fornia Railway Company and west of the Desplaines River; and

WHEREAS, Said flowage of water over said lands will necessitate the building of additional stone piers and the reconstruction of the superstructure of that portion of the said company's railway which lies between the westerly margin of the Desplaines River and the westerly line of the "new right of way" of the Chicago, Santa Fe and California Railway Company, and will also necessitate the disuse of the Joliet, Aurora and Northern Railroad track belonging to said company, east of the easterly line of the "new right of way" of the Chicago, Santa Fe and California Railway Company.

Now, therefore, in consideration of the mutual and respective undertakings hereof, it is hereby agreed and covenanted by and between the parties hereto as follows:

First—Said District shall, at its own cost, erect four stone piers between said company's present west pier and the easterly line of said "new right of way" of the Chicago, Santa Fe & California Railway Company, and a "wing abutment" at the westerly line of said new "right of way."

Said piers and abutment shall be erected in a substantial manner and be completed ready to receive and be of sufficient strength and dimensions to support the superstructure of a double track railroad bridge of standard gauge; and shall be built upon the specifications hereto attached (marked Exhibit "A"). The Sanitary District agrees that it will make any necessary alterations in present west pier of said company, to enable it to make use of this pier to support the east end of the east span of bridge they propose to erect, all work to be subject to inspection and approval of said company's representative. All piers and abutment to be built at right angles with said company's tracks.

Second—Said District shall construct upon said piers four steel deck spans (spans to be of equal length) built for single track, covering the distance between said company's present west pier and the west pier to be built by said District on the easterly line of the new "right of way" of the Chicago, Santa Fe & California Railway Company; provided, however, that the south truss of each span shall be so proportioned as to form the center truss of a double track bridge of standard gauge.

Third—Said District shall also construct one through steel span (one hundred and fifty feet long from center to center of masonry) extending from the east line of the new "right of way" of the Chicago, Santa Fe & California Railway Company to the west line of said new "right of way," built for single track standard gauge bridge, and have clear width of fourteen (14) feet between trusses, provided, however, that each of the trusses of this span be so proportioned as to form the two trusses for a double track standard gauge railroad bridge.

It is further agreed that the said District may construct and carry the superstructure or roadbed and track of the company from the easterly to the westerly line of said new "right of way" by shorter spans or by filling or embankment in part or in whole, as said District may agree with the owners of said "right of way," anything in this contract elsewhere contained to the contrary notwithstanding. In case filling is agreed upon, the "wing abutment" above provided for in "First" may be constructed at the easterly end of such filling, even though it takes the place of the westerly of the four stone piers above provided for in "First."

Fourth—The superstructure herein provided for shall be built on "Cooper's" general specifications for steel and iron bridges, Class Lehigh Heavy Grade Engines, and shall be subject to inspection and approval by a representative of said company at the shop and in the field during erection.

Fifth—Said District may use any portion of the present superstructure of said company for the erection of the structure herein provided that may seem to them fit, but all materials in said present superstructure shall remain the property of said company, and shall be retained by them. Said District shall erect the structure provided for in this contract ready for the rails, said company to furnish and lay the rails.

Sixth—Said company shall grant to said District the right in perpetuity to cause the water to flow over and across its "right of way," between the pier or abutment as finally located at the easterly line of said new "right of way," and the westerly line of the "right of way" of the Chicago, Santa

Fe & California Railway Company, as now in use, east of the Desplaines river, provided that, in case the water should reach any portion of the embankment of second party west of the east line of the new "right of way" of the Chicago, Santa Fe & California Railway Company, said District shall protect said embankment by rip-rap, a wall, or other sufficient protection, and repair any injury done.

Seventh—Said company shall convey to said District, by special warranty deed, the following described land owned by it and adjoining its "right of way" on the south, to-wit:

That part of the southwest quarter (S. W. $\frac{1}{4}$) of Section thirty-four (34), Township thirty-six (36) north, Range ten (10) east of the Third Principal Meridian, in Will County, Illinois, bounded as follows:

Beginning at the intersection of the southerly line of the "right of way" of said Elgin, Joliet & Eastern Railway Company with the easterly line of the new "right of way" of the Chicago, Santa Fe & California Railway Company, and running thence southwesterly along said easterly line of said new "right of way" to its intersection with the southerly line of the "right of way" formerly owned by the Joliet, Aurora & Northern Railway Company, said point of intersection being 1,149.06 feet more or less distant from the south line of said Section thirty-four (34) measured along said easterly line of said new "right of way;" thence southeasterly along said southerly line of the "right of way" of said Joliet, Aurora and Northern Railway Company to the westerly margin of the Desplaines River; thence at right angles to the general course of said river there to the center thread of the current of said river; thence northerly up said center thread to its intersection with the southerly line of the "right of way" of said Elgin, Joliet and Eastern Railway Company extended to said thread from the westerly margin of said river; thence northwesterly along said southerly line to the point of beginning, said southerly line being parallel to and fifty-seven (57) feet distant from the center line of the present main track of said Elgin, Joliet and Eastern Railway Company.

Eighth—Said company may remove from that portion of the "right of way" formerly owned by the Joliet, Aurora and Northern

Railway Company herein provided to be conveyed to said District, the rails, ties and other material therein.

Ninth—Said District may change the construction of the road-bed of said company where same crosses the tracks of the Chicago, Santa Fe and California Railway Company as now in use, should it be necessary or desirable so to do; provided, however, the grade of said company's tracks be not changed, and that at least nineteen and one-half ($19\frac{1}{2}$) feet in the clear be left between the Santa Fe rails and the lowest point of the superstructure of the company, unless said District arranges otherwise with the companies owning or using the Santa Fe tracks.

Tenth—The construction of said piers, abutment and superstructure by said District for said company shall be begun as early in the spring of 1896 as stone can be laid with safety, shall be carried on in such manner as not to interrupt traffic and shall be completed on or before September 1st, 1896. Since said company will be under the necessity of making certain repairs to the existing structure which would not be necessary if the work to be done by said District were completed during the current year, said District hereby agrees to pay to said company the actual cost of necessary repairs made by it and twenty (\$20.00) dollars per month toward the expenses of maintaining watchmen upon said bridge, the aggregate sum, however, to be paid by it for repairs and watchmen not to exceed two thousand (\$2,000.00) dollars. Upon the completion of said work by said District said company shall upon its part thereupon convey to said District said above described land and said easement of the right to flow water over its "right of way", and, it may also at any times hereafter remove such ties, rails and other material as it desires from that portion of the Joliet, Aurora & Northern Railway as is to be conveyed to said District, by the terms hereof.

In witness whereof, the parties hereto have hereunto caused their names to be signed and their corporate seals to be set by their duly authorized officers the day and year first above written."

"SPECIFICATIONS FOR PROPOSED MA-
SONRY FOR DESPLAINES RIVER
BRIDGE.

Exhibit "A."

The exteriors of the piers and abutment shall be rock faced ashler, pitched to a $\frac{3}{4}$ -inch batter (or ordered in writing by the inspector of the work) cut on the bed and joints and backed with good, sound stone, fitted to place and laid in full beds of mortar. When the thickness of the wall will not otherwise permit, the backing shall be made of concrete according to directions given by the inspector; each course to be finished and leveled off before the commencement of another; the back filling shall not be commenced on any course until directed by the inspector.

At least one third ($\frac{1}{3}$) of the stone shall be over sixteen (16 in.) inches in thickness; no course, however, to exceed twenty-four (24 in.) inches, nor be less than twelve (12 in.) inches in thickness.

All stone shall be cut to lie on their natural beds, and must be dressed square and true throughout to a one-half ($\frac{1}{2}$ in.) inch joint. The width of the bed shall not be less than one and one half ($1\frac{1}{2}$) times the thickness of the course, and no stone to have less bed than twenty (20 in.) inches.

Headers in each course at least one in every eight (8 ft.) feet, and shall not be less than two and one-half ($2\frac{1}{2}$ ft.) feet in length from face of the wall.

Vertical joints shall be dressed square for a distance of nine (9 in.) inches from the face of the wall.

Extreme courses in all work shall not be less than twenty-four (24 in.) inches thick.

Courses shall break joints not less than twelve (12 in.) inches; margin drafts in all angles not less than two (2 in.) inches in width; all work shall be carefully pointed.

The coping course shall not be less than fourteen (14 in.) inches thick and must extend entirely across the bridge seats.

All stone must be of first-class quality, either lime or sand stone, free from cracks, dries, and all other imperfections; all stone to be properly cut before being placed in the work, and laid carefully so that when settled to place they will rest closely, close and full in the mortar, and not allow joints

to be injured after the stone has settled in its bed by tipping up on one side to bring the stone level or in line. Care must be taken in handling the stone not to remove those already laid.

No chips or pinner's of any kind or character shall be used in the work.

The stone must be kept perfectly free from all dust or other substances that might prevent the cement from adhering properly and thoroughly.

Cement shall not be mixed more than thirty (30) minutes before using, and when exposed or drying too rapidly shall be covered or sprinkled with water as the inspector may direct.

A first-class quality of Louisville or Utica cement and clear, sharp sand of a proportion to be determined by the superintendent of bridges or his inspector shall be used in the work.

Foundations and Grillage.

All excavations to be made to a depth to be determined by the superintendent of bridges or his inspector.

Where necessary, foundations shall be composed of piling, timber, concrete or other materials to be determined by the inspector and to be placed as directed by him."

REPORT ON PROPOSITION FOR ARBITRATION ON PRICE OF CEMENT MASONRY WALLS ON SECTIONS 2 AND 4.

Mr. Cooley, Chairman, presented majority and minority reports from the Joint Committee on Engineering and Finance, with reference to the report of the Chief Engineer and order concerning the settlement by arbitration of the price to be paid McArthur Brothers, Contractors for Sections 2 and 4, for cement masonry retaining walls to be built in place of dry rubble walls on said sections, presented and referred to that Committee at the meeting held July 24, 1895, (page 2753 of the Proceedings); the majority report returning said report and order for filing, and recommending that the Chief Engineer be authorized and directed to make a final offer to McArthur Brothers, as provided in the majority report; and the minority report recommending that the building of said walls be done under the "extra work" clause of the contracts for said sections, as provided in the minority report; and the majority and minority reports were read.

Mr. Kelly, seconded by Mr. Eckhart, moved that the majority report be adopted, ordered printed, and, with enclosures, placed on file, the recommendations made in the majority report concurred in, and the Chief Engineer authorized and directed as provided in the majority report.

Mr. Cooley moved that the minority report be substituted for the majority report.

On roll-call on the substitute the vote stood: Yeas—Mr. Cooley—one (1). Nays—Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Kelly and Wenter—six (6).

Upon which result the President declared the motion to substitute lost.

On roll-call on the original motion of Mr. Kelly the vote stood: Yeas—Messrs. Boldenweck, Eckhart, Gilmore, Kelly and Wenter—five (5). Nays—Messrs. Altpeter and Cooley—two (2).

Upon which result the President declared the motion carried, the majority report adopted, and, with minority report, ordered printed, and, with enclosures, placed on file, the recommendations made in the majority report concurred in, and the Chief Engineer authorized and directed as provided in the majority report.

The following is

THE MAJORITY REPORT:

"CHICAGO, August 21, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Committee to whom was referred the report of the Chief Engineer with accompanying form of order (Proceedings page 2753) relating to the matter of cement masonry retaining wall respectfully report as follows:

The order providing for retaining walls laid in cement instead of dry rubble walls was passed by the Board May 29th, 1894, pursuant to recommendation of the Chief Engineer (Proceedings page 1971). In the assignment of the contracts for Sections 5, 6 and 7 provision was made for walls laid in cement at \$3.25 per cubic yard.

In August, 1894, by agreement, the same price was fixed for cement walls on Section 3. On Sections 11, 12 and 13 the excavation being through rock, retaining walls were needed only where clay pockets were found at the sides of the Channel. To fill

these required frequent moving of derricks and materials and is admittedly more expensive than continuous work in large quantities. For this work \$3.50 per cubic yard was agreed upon in December, 1894. In the letting of Section 15 the price bid for cement wall and incorporated in the contract is \$2.35 per cubic yard. In the re-letting of Section 1, the price fixed by bid is \$2.90. Sections 9 and 10 require no walls. The only sections for which no agreement for cement wall has yet been made are Sections 2, 4 and 14. The matter of retaining walls for these sections has come up frequently before your Committee for consideration. McArthur Brothers, the Contractors for Sections 2 and 4, by communication and personally, have presented their views in great detail, but the difference between the conclusions arrived at as to the additional cost of cement walls over dry rubble walls by your Committee and by them is so great as hitherto to have prevented any agreement. Inasmuch as the prices for this class of work on the different sections—arrived at either on actual bids or by agreement—range from a minimum of \$2.35 to a maximum of \$3.50, your Committee have thought that this Board would not be justified in acceding to a price higher than the latter figure, particularly since the price of \$3.50 per cubic yard is paid only for walling up clay pockets. In the report of the Chief Engineer and accompanying order referred to us, the recommendation is made that the question be submitted to arbitration, with the suggestion that the minimum finding of the arbitrators for the completed walls be not less than \$3.00, nor the maximum in excess of \$4.00. Information having reached your Committee that arbitration with the limitations proposed would not be acceptable to McArthur Brothers, we have not further considered that mode of reaching a settlement of the question at issue.

It is insisted by McArthur Brothers that the prices bid by them for dry rubble walls have nothing to do with the matter of fixing the additional price that should be paid for adding cement; that if there is a profit to them in their contracts in the item of dry rubble walls, the Sanitary District has no right to take away any portion of it; that under the extra work clause of their contracts they are entitled to the actual cost of the addition of cement with

fifteen per cent (15 per cent) added. While not conceding these claims to the full extent contended for, your Committee has, in reaching the conclusions herein recommended, proceeded nevertheless, in conformity therewith. Up to this time there have been built on the various sections forty-two thousand (42,000) cubic yards of retaining wall laid in cement in accordance with the same specifications as those proposed for the walls on Sections 2 and 4. This work has been under the direct charge and supervision of an Assistant Engineer and competent inspectors, and the completed wall is acknowledged by all practical stone masons to be an exceptionally honest piece of work.

Your Committee have thought that no better guide as to the actual additional cost of walls laid in cement over dry rubble walls could be furnished them than could be reached through the reports of their Engineering Department based upon the actual experience of the contractors who have constructed the walls thus far built. They have accordingly obtained from the Chief Engineer a report, based on the observation of his assistants, as to the actual cost of the cement, sand and labor of mixing and hodding for a cubic yard of wall. The result reached is, that the additional cost incurred by reason of adding the cement is \$1.47 4-10 per cubic yard. By adding to this fifteen per cent (15 per cent) thereof in accordance with the provisions of the extra work clause of the contracts, we have a total of \$1.69½. In reaching these figures, the maximum allowance for waste of material, as also the maximum proportion of mortar to stone, 33¼ per cent has been used. It is clear that in actual practice the maximum in these particulars will not continuously be reached.

The prices fixed in the contracts for Sections 2 and 4 for dry rubble wall are: \$1.74 and \$1.87, respectively, per cubic yard. Adding thereto the above estimated additional cost and percentage, to-wit: \$1.69½, we have the aggregate amounts for retaining walls laid in cement on said sections, \$3.43½ and \$3.56½, respectively, or an average of \$3.50 for each section. It seems to your Committee that this amount of \$3.50 for cement retaining walls on said sections is as much as can be equitably demanded of the District, and is certainly all that we,

as representatives of the interests of the District, feel ourselves at liberty to recommend.

Your Committee, therefore, recommends that the Chief Engineer be authorized and directed to make as a final offer to McArthur Brothers, Contractors for Sections 2 and 4, such sum per cubic yard on each section for retaining walls laid in cement, according to the specifications of the Engineer, in addition to the price for dry rubble walls, as shall make the aggregate amount for completed cement masonry walls on each section \$3 50 per cubic yard.

The report and order are returned herewith for filing.

Respectfully submitted,

(Signed)

THOMAS KELLY,

B. A. ECKHART,

WM. BOLDENWECK,

Joint Committee on Engineering and Finance."

(Two (2) enclosures.)

The following is

THE MINORITY REPORT:

"CHICAGO, Aug. 21, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The matter of retaining walls on Sections 2 and 4 is among the most serious obstacles to the early completion of the channel on account of the magnitude of the work and the limited season in which masonry can be executed. Every day increases the cost for physical reasons to say nothing of complications and delays that may arise through the rights of the contract itself.

The efforts to determine an arbitrary price have been going on for nine months and have been fruitless. In a communication to the Committee the contractor is willing to arbitrate or perform the extra work on force account. Either proposition is in harmony with the contract.

As to the merits of the question it appears:

1. That the original contract determined a dry wall and fixed the price therefor.

2. The plan was changed so as to make a wall of cement masonry.

3. The extra cost due to this change of plan is provided for under that clause of the contract headed "Extra Work," wherein it is "provided, that if the extra work done under this contract is of such a nature, being distinct from other work being done by said contractor, that the actual cost of the same can be determined, then the said contractor shall receive, and the Sanitary District shall pay, in full satisfaction for the same, the actual cost or the work with 15 per cent added."

4. That the extra cost consists of the labor, material and incidentals due to producing cement mortar and placing the same in the wall, and is capable of determination.

I see nothing to do except to determine this extra cost in some proper manner. Agreement between the parties on an arbitrary price has failed. Arbitration by disinterested experts is entirely unobjectionable, and should be fair to both parties.

Personally, I should prefer that the Chief Engineer should fix an arbitrary price to cover minor items and determine the actual cost of mortar delivered at the wall on force account and bills rendered. This will involve little labor or care in addition to that now given to wall work, as the elements of cost are few and simple. I can see no way in which this work is likely to be more cheaply done.

The suggestion that concrete walls may be more cheaply built at a future time does not strike me favorably. I am unable to persuade myself that any concrete wall that is likely to be built will prove permanent and effective under the trying conditions of the Main Channel. Its whole efficiency depends upon the cement mortar, a matter hard enough to control in the masonry wall, which has elements of stability even if the mortar should fail in some particulars. Concrete should only be used as a dernier resort in situations where stone may be unavailable. Any saving in cost will not compensate the additional risk.

I recommend that the extra cost of wall on Sections 2 and 4 be determined on force and material account, as herein set forth.

Respectfully submitted,

(Signed)

L. E. COOLEY,

Chairman of Joint Committee on Engineering and Finance."

REPORT ON REVISED AGREEMENT WITH PITTSBURGH, CINCINNATI, CHICAGO AND ST. LOUIS RAILWAY COMPANY FOR MAIN CHANNEL CROSSING AND BRIDGE AT CAMPBELL AVENUE.

Mr. Eckhart, for the Joint Committee on Engineering and Finance, presented a majority report from that Committee, accompanied by new and revised agreement, in duplicate, with the Pittsburgh, Cincinnati, Chicago and St. Louis Railway Company for bridge and crossing of the Main Channel at Campbell Avenue, recommending that the action taken by the Board with reference to agreement with said Company, at the meeting held June 5, 1895, (page 2658 of the Proceedings) be rescinded, and further recommending that the President and Clerk be authorized and directed to execute the accompanying agreement on behalf of the District, as provided in the majority report; and the majority report was read.

Mr. Cooley, Chairman, presented a dissenting minority report from the same Committee with reference to the same matter; and the minority report was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the majority report be adopted, with accompanying agreement, ordered printed and placed on file, the recommendations made in the majority report concurred in, and the President and Clerk authorized and directed to execute said agreement, on behalf of the District, as provided in the majority report.

A roll-call being ordered on the substitution of the minority for the majority report, the vote stood: Yeas—Mr. Cooley—one (1). Nays—Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Kelly and Wenter—six (6).

Upon which result the President declared the substitute lost.

On roll-call on the original motion of Mr. Eckhart, the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Kelly, and Wenter—six (6). Nays—Mr. Cooley—one (1).

Upon which result the President declared the motion carried, the majority report adopted, with accompanying agreement and minority report, ordered printed and placed on file, the recommendations made in the majority report concurred in, and the President and Clerk authorized and directed to execute said agreement, on behalf of the District, as provided in the majority report.

The following is

THE MAJORITY REPORT, WITH ACCOMPANYING AGREEMENT:

“CHICAGO, August 21, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—On June 5th, 1895, (Proceedings, page 2658,) a form of agreement between the Sanitary District and the Pittsburgh, Cincinnati, Chicago and St. Louis Railway Company, providing for the cutting of our Main Channel across the right of way of the railway company was transmitted to you, met your approval, and the President and Clerk were directed by you to execute same on the part of the District.

By reason of the lack of knowledge of the facts and of the extent of the powers of the District, the proposed agreement was made the basis of severe criticism of your action on the ground that a stationary bridge was provided for, and that the District would, by such agreement, be forever shut off from erecting a swing or movable bridge when the interests of a through navigable waterway demanded it.

Your Committee, at the next meeting of the Board, took occasion, by means of a report, to put on record in some detail the policy of the Board as theretofore expressed in relation to providing for crossings over our channel for streets, railroads and highways (Proceedings, page 2670).

As there stated, the action taken had not been hasty nor without a full knowledge of the legal position of the Board and the extent of its obligations under such contract. Nevertheless, since it was thought that it might be possible to reach an understanding with the railway company fixing the conditions under which the proposed stationary bridge might be replaced by a movable or draw bridge, the President deferred the execution of the agreement submitted and requested your Committee to secure further conferences with the officers of said company.

The Attorney and Chief Engineer have had such conferences with the officers of said railway company, and an agreement has been perfected by them, the terms of which it is believed are fair and just to both parties. Copies of same in duplicate are herewith transmitted.

The basis of the agreement is that inas-

much as the railway company is already in possession of the right of way with tracks thereon which the Sanitary District seeks to cut across with its Main Channel, the Sanitary District is legally bound to put the railway company in as nearly the same condition after the excavation of the channel across its right of way as it was before, and that without expense to it.

The provisions of the agreement as now reached do not bind the District to do anything more than it would itself have to offer to do in mitigation of damages were it seeking to obtain by condemnation proceedings the right to cut across the tracks of the railway company, and the question of damages by reason of the interruption of traffic is eliminated.

We feel it unnecessary in this connection to go into any discussion of the policy of the Board with reference to the question of stationary or swing bridges. Our report of June 12, already referred to, took up this question fully. It was there shown that the question of the present erection of stationary or movable bridges was not so much a question of preference as possibility, considering the financial resources of the District.

That the present policy of the Board is not new, but is the same as has heretofore met the approval of the District and is consonant with the practical purpose of securing the best results with the means at command. That the attempts at this time to erect movable bridges would result in delaying for two or three years beyond the time now contemplated the completion of the channel and its use for sanitary purposes.

The following are the chief provisions of the agreement now submitted:

1. A temporary opening through the railroad right of way is provided for.
2. A bridge is to be erected over the channel within two years from the date of the contract.
3. This bridge shall be stationary or movable at the option of the District.
4. The channel may be further enlarged to meet the requirements of the Sanitary District Act.
5. Should a stationary bridge be first erected it may at any time thereafter be replaced by a movable bridge.

6. The maintenance of the stationary bridge and the maintenance and operation of a swing bridge and interlocking signals are provided by capitalizing at five per cent (5 per cent) the estimated annual cost thereof.

7. In case of inability to agree upon this amount it is left to arbitration.

8. The District will replace the bridge as a whole if, in the lapse of many years arbitrators shall decide that it is necessary.

9. The Sanitary District gives the usual covenants as to reimbursing loss or damage caused by the District or its contractors during the progress of the work.

Your Committee recommend that the action of the Board of June 5th, 1895, authorizing the President and Clerk to execute the agreement with said railway company then submitted be rescinded; that the form of agreement with said company herewith transmitted be approved and the President and Clerk be authorized and directed to execute the same in duplicate on the part of the District.

Respectfully submitted,

(Signed) B. A. ECKHART,
THOMAS KELLY,
JOHN J. ALTPETER,
WM. BOLDENWECK,

Joint Committee on Engineering and Finance."

(Accompanied by agreement, in duplicate.)

THE AGREEMENT:

"*This Agreement, Made this.....day of.....A. D. 1895, between the Pittsburgh, Cincinnati, Chicago & St. Louis Railway Company, hereinafter designated the Railway Company, as first party, and the Sanitary District of Chicago, hereinafter designated the Sanitary District, as second party,*

Witnesseth, The Railway Company, in order to give the Sanitary District the opportunity of carrying forward without unnecessary delay the construction of its Main Drainage Channel in the City of Chicago, extending westward from the Railway Company's tracks, between Thirty-first and Thirty-third Streets, agrees to and does hereby grant permission to said Sanitary District to excavate underneath its

tracks at the place above mentioned, a passage-way for dredges, tugs and scows, used in the digging of said channel, upon the following terms and conditions:

1. Said opening shall have a width of sixty (60) feet; the tracks of the Railway Company to be carried over the opening upon such plan of girders and pile supports as shall be satisfactory to the Chief Engineer of the Railway Company.

2. The work in this connection to be done in such manner as shall in no way delay, obstruct or endanger the traffic of the Railway Company.

3. That the entire cost of the structure provided to support the Railway Company's tracks, also the cost of its maintenance, including the expense of a watchman during its construction and maintenance, shall be paid for by the Sanitary District.

4. It is agreed and understood between the parties that this opening shall be regarded as of a temporary character to suit the convenience of said Sanitary District in prosecuting the work on its channel without delay, and until proper arrangements can be effected for the construction of a stationary bridge on which to carry the tracks of the Railway Company over said channel.

5. It is further understood and agreed with reference to said stationary bridge, that the same shall be erected by said Sanitary District within two (2) years from the date hereof, at its own exclusive cost, including incidental expenses connected therewith, unless the Sanitary District shall elect to erect within said period of two years in lieu thereof, a draw or movable bridge as provided in paragraph six (6). That it shall be a fixed structure without draw or other movable parts, not to exceed three hundred (300) feet in length, and built in two or three spans, at the option of said District. The supports of the superstructure of said bridge shall be made of substantial masonry, resting upon pile foundations, the character of all materials composing said foundations and superstructure, also the details of the construction to be acceptable to the Chief Engineer of the Railway Company. The design of said bridge and a specification of all materials intended to be used in the construction of said bridge and foundation, shall be submitted to and

approved by the Chief Engineer of the Railway Company before any work shall be begun on said bridge, and the same shall be built in conformity with the standard specifications of the railway company relating to metallic structures.

The Railway Company agrees to maintain in good order the fixed bridge and the tracks thereon, and the Sanitary District covenants and agrees to pay to the Railway Company immediately upon the completion of the fixed bridge, a sum of money, the interest on which, computed at the rate of five (5) per cent per annum, shall be sufficient to defray the cost of the maintenance of said fixed bridge, including all ordinary or special repairs of the same made necessary from any cause whatsoever, and the amount so to be paid by the Sanitary District to the Railway Company shall be determined by the Chief Engineer of the Railway Company and the Chief Engineer of the Sanitary District. If, however, these representatives of the two contracting parties fail to agree upon the amount, then the sum to be paid shall be determined by a commission of three competent engineers familiar with the maintenance of bridges, one to be appointed by the Railway Company, one by the Sanitary District and the third to be chosen by the two so appointed. The award made by this commission, or a majority of them, shall be accepted by both parties as final and conclusive, and the sum so fixed and determined upon shall be paid to the Railway Company within thirty (30) days after the declaration of the award.

6. It is further agreed that the temporary opening herein provided for, may be enlarged to the full width of the Main Drainage Channel so soon as the stationary bridge herein specified shall have been constructed; and provided that said bridge shall be so constructed as to carry the tracks of the Railway Company across the entire width of the said Main Drainage Channel; that the Sanitary District shall also have the right to further enlarge said channel to meet the requirements of the act organizing said Sanitary District; provided always that said Sanitary District shall always, at its own expense and in such manner as the Chief Engineer of the Railway Company may require, extend said bridge to the full width of said enlarged

channel, and that when hereafter the Sanitary District, in order to meet the requirements of a navigable waterway, shall determine to replace the fixed bridge herein provided for by a draw or movable bridge, or in case it shall elect to erect within two years from date hereof a draw or movable bridge in lieu of the stationary bridge provided for in paragraph five (5) hereof, then it shall have the right so to do at its own exclusive expense, and provided that such bridge shall as to design, quality of material and excellence of workmanship, be first approved in writing by the Chief Engineer of the Railway Company, and that at the time of constructing such draw or movable bridge, the Sanitary District shall also at its own expense, construct a system of interlocking signals to insure the safe and prompt operation of the trains of the Railway Company across said bridge, in accordance with plans to be submitted to and approved by the Chief Engineer of the Railway Company.

7. The Sanitary District further covenants and agrees in case of such erection by it of a draw or movable bridge, to pay to the Railway Company, a sum of money, the interest on which computed at the rate of five per cent (5 per cent) per annum, shall be sufficient to defray the cost of the maintenance and operation of such draw or movable bridge, including all ordinary or special repairs of the same, made necessary from any cause whatsoever, and also the system of interlocking signals herein provided for; the amount so to be paid by the Sanitary District to the Railway Company shall be determined by and between the President and Chief Engineer of the Railway Company and the President and Chief Engineer of the Sanitary District. If, however, these representatives of the two contracting parties shall fail to agree upon the amount, then the sum to be paid shall be determined by a commission to be composed of five persons familiar with the operation and maintenance of bridges and signals; two to be appointed by the Railway Company, two by the Sanitary District and the fifth to be chosen by the four persons thus appointed. The award made by this commission, or a majority of them, shall be accepted by both parties as final and conclusive, and the sum so fixed and determined upon shall be paid to the Railway Company before work of constructing said

movable or draw bridge shall be begun, and the same shall be accepted by the said Railway Company as full compensation and satisfaction for all costs and expenses which may be incurred by it in the maintenance and operation of said draw or movable bridge. It being, however, understood that in the determination of the sum of money, the interest on which computed at the rate of five per cent (5 per cent) per annum shall be sufficient to defray the cost of the maintenance and operation of such draw or movable bridge and the interlocking signals as herein provided, proper credit shall be given to the Sanitary District for any sum of money previously paid to the Railway Company upon a similar capitalization for the maintenance of a fixed bridge, as provided under Section five (5) of this agreement.

8. And in further consideration of the rights herein conferred by the Railway Company upon the Sanitary District, and as a condition precedent thereto, the Sanitary District hereby agrees that whenever by deterioration or general insufficiency it shall become necessary to renew and replace with new structure the whole of any bridge, or of any spans thereof, which said Sanitary District may construct across its channel which is herein provided to be cut across the right of way of the Railway Company, then said Sanitary District shall, at its own expense, erect such new structure upon a plan satisfactory to the Chief Engineer of the Railway Company. In case of a disagreement between the parties hereto as to the necessity for any such renewal, at the time when the demand therefor is made, the question shall be decided by three competent engineers, selected as provided in paragraph five (5), for determining the capitalization of the cost of maintenance of a fixed bridge, the award of whom or any two thereof shall be binding upon the parties hereto.

9. The Sanitary District further agrees that it will reimburse the said Railway Company promptly for all damage, loss or expense that may be inflicted upon or accrue to the latter in consequence of any act done by said Sanitary District or any of its contractors, subcontractors or employees, or either, during the progress of any widening of said channel, as the same now or hereafter exists, and during the work of

constructing either of the bridges hereinbefore mentioned, to the end that the Railway Company, its successors and assigns, may never be subjected to any expense whatever, in consequence of any act done or proposed to be done by the Sanitary District in pursuance of authority hereby granted.

In testimony whereof, the parties hereto have caused these presents to be executed as of the day and year first above written."

The following is

THE MINORITY REPORT:

"CHICAGO, Aug. 21, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

Statement.

GENTLEMEN—The contract with the Pittsburgh, Cincinnati, Chicago & St. Louis Railway Company (ordinarily known as the Pan Handle) submitted to and approved by the Board on June 5, 1895, (page 2658 of the Proceedings) while incidentally providing for a temporary crossing for the purpose of facilitating work on Contract Section O, determined a fixed bridge of one or two spans to be built within two years. Owing to a rebellious public sentiment, this contract has remained unexecuted, and manifestoes to the public, justifying the proposed action, were issued by the majority of the Joint Committee on Engineering and Finance and by the President, on June 12, 1895, (page 2670 et seq. of the Proceedings). It is now proposed to modify this contract so that this District will be privileged at a future time to change the fixed bridge as provided for into a swing bridge.

Several reasons are set forth in justification of the course taken by the majority of the Board, which are discussed at length in the manifestoes referred to above, and also in the report of the majority of the Joint Committee on Engineering and Finance of November 14 and 21, 1894, (pages 2298 and 2313 of the Proceedings). Some of these are special to this locality, and will be first examined.

The Majority Reasons.

It is alleged directly or by implication:

1. That an emergency exists which necessitates an early settlement in order to prosecute work on Sections N and O. (See

manifesto, June 12, 1895, page 2671 of Proceedings.)

2. That fixed bridges at this locality are expedient from financial considerations, and on account of delays, embarrassments and possible legal complications. (See Proceedings June 12, 1895, page 2671-2. Great delays and increased cost are stated.)

3. That the reserved right of condemnation for future movable bridges remains in the District. (See Proceedings June 12, 1895, page 2672.)

4. That the life of a bridge is so limited that the District will not incur loss by a change when required by commercial necessities. (This has been repeatedly stated in oral argument and in the public prints.)

1. *The Emergency.*

a. The contracts for Sections N and O provide (see Proceedings of May 2, 1894) a special and additional clause, not contained in other contracts, and designed to secure from molestation all bridge sites, under Section "7a" as follows:

"And further, it is understood and agreed that no work shall be done upon any portion of the line covered by this contract which in the judgment of the Chief Engineer should be kept free and unincumbered, pending the adjustment of any question or questions affecting the relations of this District with the municipality of Chicago, the Board of Park Commissioners, or any railway company or corporation, growing out of the readjustment of streets, highways, boulevards or railway tracks, until such time as the said Chief Engineer shall in writing order the contractor to proceed upon the portions exempted as above."

b. The contract for Section O provides for the improvement of the West Fork at the expense of the contractor, under Section "7a" as follows:

"*West Fork Navigation*—If it should be found that there is not sufficient depth of water or width of channel for the floatage of dredges and barges to be employed in the work in the West Fork of the South Branch of the Chicago River, between Robey Street and the junction of the proposed collateral channel with the said West Fork, then the second party shall procure such necessary depth and width free of all cost or liability of any kind to the Sanitary District."

c. The contract for Section O provides under Section 7 for the construction of a "collateral channel" to connect the Main Channel with the West Fork, the navigation of which is to be improved under Section "7a" of the contract.

d. The report of the Joint Committee on Engineering and Finance in transmitting the foregoing contracts explains the purpose of the special clauses referred to above. This was to provide for the removal of excavated material through the collateral channel and the West Fork, without disturbing bridge sites until bridge problems could be worked out and the contracts were nearing completion.

It appears, therefore, from the contracts and the report accompanying the same, that the disposal of the material is fully provided for, and that this disposal did not contemplate an opening under the Pan Handle and other railway and highway crossings at and near Western avenue. The emergency is therefore a myth, which could only have had one of two objects:

First—To relieve the contractors of a fundamental obligation in a manner unprecedented in the history of the District.

Second—To justify before the public an otherwise indefensible solution of the bridge problem.

It is not contended that the actual solution of the bridge question demanded the undue haste. It is admitted that bridge construction will actually require but a few months, and that the Main Channel cannot be opened until late in 1897, so that no pressing necessity is apparent in the premises until some time in 1896.

It must be further admitted that under the direct and permissive provisions of these contracts, the work can be diligently prosecuted much nearer to completion within the next year than will be possible on several other contracts, and upon some of which far graver questions are pending with absolutely no progress in solving the same on the part of this Board. I refer to Sections F, E, D, A, 1, 2, 4, 14 and 15, all of which will be greatly delayed on account of undetermined work, inefficient contractors or other causes which have not been provided for.

It must be remembered also that this Board has determined upon a large and

unnecessary expenditure in running around the wire mills at Lockport. That it admits, but has not considered work that will take two seasons to prosecute at Joliet, and that the improvement of the Chicago River is also a conceded necessity. These works all properly precede bridge construction.

In view of all these things, why then this unseemly haste about bridge settlements?

Is it necessary, wise or in good taste for this Board to prejudge the matter in view of a possible change in its personnel this fall, and are we to infer that the next Board will be incompetent and make a wrong solution? I say, unhesitatingly, that there is no necessity or justification for a bridge settlement in 1895.

2. Expediency of Fixed Bridges.

The report of November 21, 1894, and the manifesto of June 12, 1895, seek to convey the impression that swing bridges will add enormously to the cost, that untold consequential damages will be entailed, that the railways will not consent without tedious condemnation proceedings, and that the work will be delayed from three to five years.

All this is gratuitous, as is evidenced by the fact that we have now before us a swing-bridge contract, that another is pending, and we are assured of the same contract from two other companies. So far as these four companies are concerned, they would strike out the fixed bridge clause entirely if the Board so wished. The two other railway companies with which we have to deal are equally amenable to reason, and one of them has strongly objected to any contract that failed to provide swing bridges.

Why this Board has sought to put the railways in a hostile position I am at a loss to explain, because as Chairman of the Committee which has had all matters of this kind in charge, I know of no hostility on account of swing bridges *per se*. Their necessity has at all times been candidly admitted, and the suggestion of a different policy has come from members of this Board.

The same is true of consequential damages. In all negotiations these have been waived, and have only been mentioned as a possible ground of contest in condemnation proceedings. It appears that the Board in its wisdom is able to settle the whole railway

bridge question and all legitimate damages appertaining thereto without the aid of courts, certainly a most remarkable and recent development of judicial and expert knowledge considering the painful and tedious experience on right of way, involving scarcely more money. This surely is also high testimony to the disinterested spirit of railway officials, about which the majority was recently so skeptical.

The three to five years' delay has also vanished. How about the cost?

No figures over the Chief Engineer's signature have been published. The report and manifesto above referred to state that the difference is over one and a half million dollars, not several, as has been often loosely given out.

The actual figures furnished me by the Chief Engineer during the past winter are as follows:

Swing bridges.....	\$ 2,670,623 00
Fixed bridges.....	1,888,650 00
Difference.....	<u>\$ 1,281,973 00</u>

These estimates include interlocking maintenance and operation. He has had no opportunity to say what he has expressed to me; that he believes the problem can be worked out with even a less difference.

It appears from the above that the estimates of the majority report are to be taken in the pickwickian sense.

When we come to consider, however, the group of railways near Western avenue, the course of the Board is utterly without justification or defense.

In appears from the report on contracts for Sections N and O, (May 2, 1894, page 1912 of the Proceedings) that it was then contemplated to do away with the swing bridges on the West Fork and transfer this obligation to the Main Channel. In carrying out this policy the collateral channel was to be built, connecting the West Fork and the Ogden Ditch with the Main Channel opposite the Bridewell, thus avoiding the expensive rock cut near Western avenue, and it was considered that the West Fork would eventually be filled up, thus doing away with several expensive bridges and abating a bye-channel liable to objection on sanitary grounds.

In furtherance of this policy and with the approval of this Committee, the Chief Engineer had, some months previous, by arrangement with the Stock Yards and Northern Pacific Companies, secured the postponement of the construction of the new swing bridge over the West Fork, and reached an understanding by which both companies were to waive all questions of maintenance and operation, and, in addition, the Northern Pacific would contribute to the swing bridge on the Main Channel the difference in the cost between the fixed and swing bridge over the West Fork. Still pursuing this policy, the Chief Engineer reported to the Committee a proposition from the Chief Engineer of the Pan Handle Railway, weeks prior to the fixed bridge contract of June 5, 1895, that his road would waive maintenance and operation also, if we would co-operate in the ultimate closing of the West Fork.

In addition to three railway companies and the Sanitary District, the City of Chicago was also interested on account of its bridge at Western avenue, and the expensive rock cutting required to improve the West Fork, and also the West Park Board on account of the boulevard bridge at California avenue. It was assumed that some of the owners between Western and California avenues would object, but the water rights in this reach were not considered a serious item of cost, and further, that any difficulty that might arise through changing the navigable channel to the collateral channel could be obviated without serious trouble. The entire proposition in all its phases was to be regarded as in every way desirable and a very great improvement over old conditions.

The estimate of the Chief Engineer for highway and railway movable bridges at and near Western avenue, was.....\$ 859,383 00

Out of this is to be taken the capital representing operation and maintenance, \$157,633, and the proposed contribution by the Northern Pacific, estimated at \$130,000, a total of..... 287,633 00

Leaving the net cost of movable bridges.....\$ 571,750 00

The estimated cost of fixed bridges was.....	\$ 416 587 00
The apparent saving by fixed bridges was.....	\$ 155,163 00

This has, however, a further offset, as the policy of fixed bridges leaves the swing bridges on the West Fork, and necessitates the ultimate removal of the rock ledge near Western avenue.

Estimated cost of improving West Fork.....	\$ 200,000 00
Capital to operate and maintain city bridge.....	25,000 00
Boulevard swing bridge.....	75,000 00
Total.....	\$ 300,000 00

This cost is to be borne by the city and by the Park Board, who represent the same taxpayers, so a saving by the District that imposes burdens elsewhere is not justifiable. The margin in favor of the swing bridge policy for the Main Channel is \$144,837, which is ample to cover any property rights involved, and any discrepancy in estimates and interest account.

These figures demonstrate that not even a present saving in money to the tax-payer is to result from the fixed bridge policy at this locality.

In comparing the estimates on the remainder of the line, the Santa Fe bridges will be omitted, as the character of treatment best adapted to this line and what will be feasible, is entirely problematical. In my opinion, the solution best for the District and the railway as well, will differ little, whether fixed or swing bridges be adopted.

Omitting the Santa Fe, swing bridges.....	\$1,037,994 00
Omitting the Santa Fe, fixed bridges.....	481,564 00
Apparent saving.....	\$ 556,430 00

(Santa Fe, apparent saving by estimate of Chief Engineer \$282,753.00.)

The millions have then dwindled down to less than six hundred thousand so far as any positive data are available. This amounts to the District tax levy for less than two months. Including the Chief Engineer's estimate for the Santa Fe Railway, it does not amount to three, and if everything be included as originally esti-

mated, it scarcely amounts to four months. The original estimate is not greater than what passes through the Comptroller's office in the City Hall once a fortnight, or the aggregate taxation in Cook County for all purposes for less than ten days, and we may safely assume that the possible extra cost could have been well within the limits. The natural inquiry is, why has this question been raised, and why all this ado? Why should this Board persist in its course with such dogged wilfulness, a course contrary to the spirit of the law and not demanded by any body of tax-payers that are visible to the naked eye?

3. *Reserved Rights of Condemnation.*

It is stated in the manifesto of June 12, 1895, in defense of the fixed bridge contract of June 5, 1895, that the District possesses the reserved rights of condemnation which can be exercised at a future time in favor of swing bridges. I am informed that the Attorney for the Pan-Handle Road expressed very great surprise at this view of the law.

The District, so far as a Board of Trustees could do so, in this contract abdicated any rights in reference to swing bridges, and if the proposed action failed in any particular, it was due to the fact that no action by such a Board could operate to destroy the rights of the people.

Whatever view may be chosen, it is now evident that the majority deem it expedient to include an optional swing bridge clause in their contracts, evidence sufficient that they have not been able to convince the bar, or a majority of their fellow-citizens, with the full validity of their views.

4. *Life of a Bridge.*

It has been freely asserted in debate and exposition that the life of a bridge is very limited. It is sufficient to say that experience shows no limit to the life of a metal structure that is properly cared for and that is properly proportioned to its work. Such structures are essentially permanent, and no reason exists to the contrary except neglect or change in service. The loss from future change is simply a question of cost, maintenance and interest.

We conclude, therefore, in regard to the bridges at and near Western Avenue:

1. That no emergency exists requiring an immediate settlement.

2. That movable bridges will cost the tax-payers less and are equally acceptable to the railways.

3. If the Board failed to prejudice the people's rights, it was due to lack of power.

4. That fixed bridges as proposed are permanent structures.

The Modified Contract.

The contract of June 5, 1895, still awaits the signature of the proper officers of the Board, no action having been taken to rescind the same. For this, it is proposed to substitute a new version, differing from the old by a greater redundancy of verbiage and certain new sections which allow the Sanitary District to build a draw or movable bridge in place of the stationary bridge, should it so elect.

The situation appears to be as follows:

1. The Board passes an irrevocable contract for stationary bridges.

2. The public, through the press, proceeds to jump on the Board.

3. The Board, through its Committee and the President, issues manifestoes in defense of its course, and designed to show on the one hand, that the contract was not necessarily a stationary bridge contract, and, on the other, that swing bridges, ought to be postponed to some indefinite futurity.

4. The Board, the railway company concurring, recedes from its position, and proceeds to modify the contract so as to permit the building of a draw or movable bridge, should the Board so elect at any time within two years.

5. The agreement as it now stands is like the money plank of a political platform, either hard or soft, according to the views of the individual and the bias of his audience.

6. After all agreements have been made it is feasible for a majority to determine the whole question at one sitting and without notice, so far as the people are concerned.

This whole document is a triumph of modern diplomacy, most creditable to the sagacity of the leader of the stationary bridge majority. It does not appear that any of his following have changed their minds, nor that the opportunity to make the record will fail him, when the public

mind is absorbed with other issues, or is pessimistic with recurring taxes, or in some fog of doubt which special interests can create. In the hands of a majority who do not believe in swing bridges the contract means exactly what it did before, and no more.

The contract makes two serious blunders:

First—It concedes the perpetual maintenance of the structures. This relieves the railway of the necessity for proper care, which would otherwise insure the permanence of the structure. What may also come about through increased service and future demands is not a proper subject for consideration any more than the rights of some railway that has not reached the channel. The railway surely is not entitled to more than is now in sight.

Second—A four-track bridge is conceded. The two additional tracks have been recently added, and even now extend only a short distance. The necessity has not developed a third of a mile away at the West Fork bridge.

The Santa Fe, the Madison and Northern and the Alton do their business over two tracks at the South Fork, the Alton and the Fort Wayne on two tracks at the South Branch, and the Northwestern, on all its lines, over two tracks at the North Branch. The New York Central into New York is only now changing its two track bridge to a four-track, and I am not aware of any other four-track bridge across a navigable stream in this country. The entire tonnage by rail across the Mississippi at St. Louis was handled until recently on a two-track bridge, and no traffic necessity for an additional bridge has developed.

The whole contract in this respect is at fault, and bears evidence of an undue desire to come to an understanding on the theory that the swing bridge leg of the straddle will not be called into service when matters are finally settled.

I am by no means certain of the respective rights of the District and of the railway companies, and regret that when last year a majority of the Board had concluded that no agreement should be reached except through the courts, the main issues were not put in process of adjudication. I am very much disposed to believe that the District would be found to have rights hitherto

little considered, in view of the paramount public character of this enterprise. I see no good reason why the channel should not be in at least as good legal position as a railway or common highway, and I am not sure but that the people have important reserved rights which can be made available through a comprehensive court decision or by legislation. I can see how the views held in respect to vested interests would quite prevent the carrying out of some great waterway enterprises now under discussion and of supreme importance to the people, and I am unable to concede that these views are the ultimate law.

General Considerations.

In my reports of November 14 and 21, 1894, and in an addenda to a brief on lake level effects (see Proceedings of July 2, 1895), I have discussed at some length the merits of the bridge question in respect to this Channel. It is not necessary to recur to this further than to say that the question does not turn upon the pessimism or optimism of anyone's views in respect to future possibilities of improving the Mississippi River, or how soon the General Government or some other agency may enter upon the improvement of the Illinois River. It goes without saying and is admitted that the improvement of the Illinois would justify swing bridges, and it is not denied but that a swing bridge policy on the part of the District would hasten this desirable end, and further, that the District has vexatious liabilities throughout the Illinois Valley, which would be lessened through a broad policy. All this, however, is a question of degree rather than of kind, though it may be observed, in passing, that the man who shouts his waterway faith without works never gets anywhere unless he turns around and walks backward.

What would be thought of a man who built a slip a half a mile long, connecting with the Chicago River, and closed its mouth with a permanent barrier; the Calumet River is only improved three or four miles inland, and why should not that be closed because it don't go to the moon or some other terminus, according to individual fancy. The argument is precisely of the kind used to thwart swing bridges on the Main Channel. How far, pray,

must this Channel extend before swing bridges are justified?

The time was when the Calumet region consisted of a dock company, a sand bar in front of a marsh and a Government appropriation. The appropriations have been assiduously cultivated, through the agency of two land-holding corporations, and strictly on a swing bridge basis. The District has double the land area, a channel which the Calumet region has only dreamed of, and every favoring condition, but it belongs to the people, and their Trustees are unable to emulate the enterprise and sagacity of the Calumet promoters, and, I was about to say, to cope with them also.

The financial limitations of the law have been urged, but this is solely of this Board's creation, and cannot be pleaded in extenuation of its other misdeeds. The General Assembly was not averse to giving the District any needed financial powers, and the large majority were lead to believe that the bridge question would be worked out in good faith in the spirit of the law, or this District would not have obtained its legislation in the form it did. I do not see how this obstacle is to prove more serious than some others that have not yet dawned on the horizon of a majority of this Board.

As compensation for recognized lapses, otherwise I see no reason for the defense, we are advised (see report of November 21, 1894, and the President's manifesto of June 12, 1895,) that this Board has gone further than the law required in the dimensions of the channel. The mistake is in taking the dimensions specified in the law together rather than as alternative, the actual dimensions being determined by the required capacity. The matter is clearly set forth in the statement of the Chief Engineer of June 23, 1895. (See page 2688 of the Proceedings.) The sole question in determining the proper channel, was the question of economy, and the particular dimensions given were dictated solely on that basis, and not by any requirements of navigation which only approach the sanitary requirements in a minor degree. This District has not spent one dollar to meet the requirements of navigation *per se*, and will not until it takes up the swing bridge question, and even this has some justification in maintaining the channel. Such errors

are inexcusable when the engineering facts and authorities are so closely at hand.

The Board has surely not forgotten the first serious consideration of channel capacity by the Engineering Committee when it became known that the channel proposed would not carry the volume of water at all times as required by law. Subsequent changes have helped this matter somewhat, but the channel is still materially deficient for about eighty days of the average winter. This must be again considered in due season, and meantime the majority is respectfully referred to a report by the writer of October 24, 1892, (see page 828 of Proceedings). I would not allude to this matter at this time but for the flip-pant assertions made in regard to the requirements of the law having been exceeded, inferentially in the interests of navigation.

I regret that this whole question should be needlessly raised at this time, and have expressed that regret in former reports, and been disposed to postpone the question as one now leading to needless embarrassment on account of issues already raised throughout the State, in the lake region and in the Mississippi Valley. I believe I

am in position to judge the temper in each of these Districts, and I am disposed to believe that a sagacious course may turn all to our great advantage, while a persistence in the present direction will work an endless train of difficulties.

Aside from all this I am so fully impressed with the course that should be pursued in good faith and to our great advantage, that I find little patience in the attitude of the majority. Self-congratulations on the course of the majority as that of "practical men" are doubtless considered worthy tributes of mutual esteem; but to those who cut out events, the self-styled "practical man" is held to be one who is unable to justify opinion with reason.

Respectfully submitted,

(Signed)

L. E. COOLEY,

Chairman of Joint Committee on Engineering and Finance."

ADJOURNMENT.

On motion of Mr. Boldenweck, seconded by Mr. Eckhart, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

AUGUST 28, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and eightieth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, August 28, 1895, at 2 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wen-

ter—six (6), and subsequently Messrs. Gilmore and Prendergast, making a total of eight (8) members, were present.

MINUTES.

By unanimous consent, action on the minutes of the regular meeting held August 14, 1895, and of the adjourned session of the same regular meeting, held August 21, 1895, was deferred until the next meeting, on motion of Mr. Boldenweck, seconded by Mr. Altpeter.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

Construction Account—
Griffiths & McDermott, (Sec. 1, Aug. 16,
1895).....\$ 10,529 40
McArthur Brothers, (Sec. 2, Aug. 16, 1895) 17,561 25
Gilman & Company, (Sec. 3, Aug. 16, 1895) 23,046 62
McArthur Brothers, (Sec. 4, Aug. 16, 1895) 15,758 75

CLAUSE "J"	
Total Retained.	Amount re- leased on this Voucher.
\$16,203 13	
621 00	\$ 621 00

		CLAUSE "J"	
		Total Retained.	Amount re- leased on this Voucher.
The Qualey Construction Co., (Sec. 5, Aug. 16, 1895).....	\$18,277 44	\$7,371 00	
Mason, Hoge & Company, (Sec. 6, Aug. 16, 1895).....	20,393 63	945 00	\$ 405 00
Mason, Hoge & Company, (Sec. 7, Aug. 16, 1895).....	17,950 19		
Mason, Hoge, King & Co., (Sec. 8, Aug. 16, 1895).....	14,130 59		
Halvorson, Richards & Co., (Sec. 9, Aug. 16, 1895).....	18,167 63		
E. D. Smith & Co., (Sec. 10, Aug. 16, 1895)	12,390 00		
Mason, Hoge & Company, (Sec. 11, Aug. 16, 1895).....	17,197 25		
Mason, Hoge & Company, (Sec. 12, Aug. 16, 1895).....	14,157 50		
Mason, Hoge & Company, (Sec. 13, Aug. 16, 1895).....	3,909 72		
Smith & Eastman, (Sec. 14, Aug. 16, 1895)	22,374 62		
Wright, Meysenburg, Sinclair & Carry, (Sec. 15, Aug. 16, 1895).....	14,971 25		
Heldmaier & Neu, (Sec. A, Aug. 16, 1895)	5,975 70	26,088 52	
Heldmaier & Neu, (Sec. B, Aug. 16, 1895)	6,133 05	10,910 97	637 20
Western Dredging & Improvement Co., (Sec. C, Aug. 16, 1895).....	6,909 00		
E. D. Smith & Co., (Sec. D, Aug. 16, 1895)	5,922 00		
Angus & Gindele, (Sec. E, Aug. 16, 1895)	8,528 63	4,482 00	
Weir, McKechney & Co., (Sec. F, Aug. 16, 1895).....	4,259 06		
Gahan & Byrne, (Sec. G, Aug. 16, 1895)..<	7,711 87	9,982 56	
Gahan & Byrne, (Sec. H, Aug. 16, 1895)..<	8,563 55	6,159 31	
Christie & Lowe, (Sec. I, Aug. 16, 1895)..<	10,543 75	325 00	
Christie & Lowe, (Sec. K, Aug. 16, 1895)..<	8,531 25	2,275 00	
The Heidenreich Company, (Sec. L, Aug. 16, 1895).....	9,363 41	4,857 64	
The Heidenreich Company, (Sec. M, Aug. 16, 1895).....	4,855 11	3,335 29	
McMahon & Montgomery Co. et al. (Sec. O, Aug. 16, 1895).....	1,589 25	2,204 45	
Mason, Hoge & Co., (Sec. 7, Extra work— Dimension stone, rip-rap work, earth core and embankment, Aug. 16, 1895)	200 00		

Total..... \$329,901 47

ENGINEERING DEPARTMENT.

U. W. Weston, (traveling).....	\$ 17 50	
Chas. L. Harrison, (traveling).....	57 30	
		\$ 74 80

LAW DEPARTMENT.

Edwards & Hancock, (stationery).....	\$ 12 00	
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GENERAL ACCOUNT.

Chicago Edison Company, (electric light- ing).....	\$ 36 89	
C. F. W. Junge, (postage stamps).....	30 00	
		\$ 66 89

POLICE DEPARTMENT.

Standard Oil Company, (kerosene).....	\$ 32 07
G. L. B. Rounseville, (tourniquets).....	18 00
Daniel E. Tracy, (horse shoeing).....	21 40
	<hr/>
	\$ 71 47
	<hr/>
Grand total.....	<u>\$330,126 63</u>

Mr. Eckhart, seconded by Mr. Kelly, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

WEEKLY REPORT ON EMPLOYEES.

The Clerk presented a report, in accordance with the Rules, showing the number of persons in the employ of the District for the weeks ending August 17 and 24, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, Aug. 28, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I beg leave to report herewith the number of employes in each department for the weeks ending August 17 and 24, 1895, as the same have been reported to me:

Engineering Department.....	168
Clerical Department.....	4
Law Department.....	7
Treasury Department.....	1
Police Department.....	48
Telephone operator.....	1
Towpath force.....	2
	<hr/>
Total employes.....	<u>231</u>

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk.”

MONTHLY REPORT FROM ENGINEERING DEPARTMENT.

The Clerk presented a report from the

Engineering Department for the month of July, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, Aug. 27, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I herewith transmit the reports of the Divisions of Construction and Drafting and Designing, showing the detailed operations of the Engineering Department for the month of July, 1895; also a classified statement of expenses to Aug. 1st, 1895.

The expenses for the month of July were as follows:

Salaries.....	\$ 16,013 02
Supplies, etc.....	676 63
Regular contractors' estimates.....	608,538 66
Extra contractors' estimates.....	2,539 00

Total..... ..\$ 627,767 36

I estimate the expenses of this department for the month of August will be \$663,000.00.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer.”

“CHICAGO, Aug. 26, 1895.

Isaham Randolph, Esq., Chief Engineer:

DEAR SIR—I herewith submit my report of the work of construction for the month of July, showing the amount of work performed during that month, and also the current tabulated statements showing the progress and status of the work up to the 1st inst. The results are extremely gratifying and indicate that more than one-half of the sections will be completed more than six months in advance of the contract requirements.

The excavation on Section 13 was practically completed on the third day of July, two years, seven months and six days from the commencement of the work.

One of the heaviest rock sections (Section 10) at the Cook-Will County line, where the work was inaugurated on September 3d, 1892, will be completed during the current month, and the adjacent rock sections on either side will follow closely thereafter, so that by January 1st all of the solid rock sections first placed under contract will have been completed.

Up to the 1st inst. about two-thirds of the entire quantities had been excavated, and at the present rate of progress, more than four-fifths of the whole work of excavation will have been done by January 1st, thus insuring its completion during the coming year.

A resume of the results upon the several sections for the month of July may be summarized as follows:

During the month of July, 10,874 cubic yards were excavated from the Main Channel on Section O, and 13,100 yards from the Collateral Channel. Much of this work was done near the Western avenue boulevard, a large portion of the excavated material being used for approaches to a temporary bridge to be constructed at that point.

Upon the collateral channel the excavation was done with wheel scrapers, carts and dipper dredges.

Upon Section N, 14,400 cubic yards were removed, principally by teams and wheel scrapers.

Sections M and L return an estimate of 107,100 cubic yards, which was excavated by four steam shovels, in connection with incline conveyors, three of which worked day and night, and one of them day shifts only. The total number of shifts worked was $142\frac{1}{2}$, averaging 752 cubic yards per shift. An average force of twenty-three men and one team was engaged in trimming down the slopes.

Sections K and I employed a considerable force of men in trimming the slopes and also a wheel scraper force upon the same kind of work, the output of which was 12,391 cubic yards.

The four steam shovels, with truss bridge conveyors, were employed a total of 152

shifts, their output being 124,724 cubic yards, an average of 821 yards per shift.

Sections H and G recovered considerable lost ground during the month, having gained about 25 per cent over the regular monthly requirements.

Upon Section H, 4,539 cubic yards were taken out by a wheel scraper force, and 40,753 yards with a steam shovel and incline conveyor, which was engaged $51\frac{1}{2}$ shifts, giving a daily average output of 791 cubic yards. The Hoover & Mason Conveyor was employed 45 shifts, yielding 22,448 cubic yards, an average of 499 yards per shift of ten hours each. From present appearances this conveyor will show much better results during the current month.

The work upon Section G amounted to 53,321 cubic yards, of which 24,879 yards were taken out with a steam shovel and belt conveyor in $44\frac{1}{2}$ shifts, an average of 548 yards per shift, and 28,942 cubic yards with a steam shovel and incline in $45\frac{1}{2}$ shifts, making an average of 635 yards per shift.

Section F, when fairly started, had the misfortune of the partial wrecking of one of the two truss bridge conveyors of Christie & Lowe pattern, so successfully employed on Sections I and K, which will require some time to rebuild. This materially affected the output for the month, which amounted to only 22,500 cubic yards, an average of 341 cubic yards per shift for 66 steam shovel shifts.

Section E employed a small wheel scraper force in addition to their regular steam shovel plant, which took out 2,800 cubic yards of material. The three steam shovels were employed 93 shifts, yielding a total of 52,300 cubic yards, an average of 562 yards per shift.

Section D returns an estimate of 61,900 cubic yards for the month of July, 900 yards of which was taken out with small cars and steam hoists, and the balance—61,000 yards—with three steam shovels that were employed 106 shifts, making an average of a little more than 566 yards per shift. An average force of ten men and five teams was also employed in trimming down the slopes.

Section C shows fair progress, the total output being 66,700 cubic yards. Of this amount 20,300 yards were handled with team and shovel gangs, and 46,400 yards

with four steam shovels in 124 shifts, an average of about 375 yards per shift.

Section B continues to gain, and, notwithstanding the delay in completing the Desplaines River Diversion, is now about three months in arrears. Twenty-two thousand seven hundred cubic yards were removed with team and shovel gangs, and 34,200 yards with three steam shovels that averaged 407 cubic yards per shift for the 84 shifts employed.

Section A, though still far in arrears, may be expected to show marked improvement hereafter. When it is considered that this has been what may be termed a water-logged section, from which the back water of the Desplaines River was not excluded until the completion of the levee about the middle of last January, the present standing of the section is not unfavorable, a condition that is largely attributable to the excellent work of the hydraulic dredge, pending the building of the levee, and while the section was still inundated. Since the beginning of dry excavation great difficulty has been encountered, in places, to find a stable foundation for the dumping plant and waste material, owing to the mucky character of the land upon either side of the channel whereon the spoil must be deposited. It is probable, however, that this difficulty has been nearly overcome. The total estimate for the month was 21,700 cubic yards. Of this amount 13,800 yards were moved by team and shovel gangs, and 7,900 yards with two steam shovels in 37 shifts, an average of about 214 yards per shift.

Section 1—The work on this section embraced both glacial drift and solid rock, the total output being 67,600 cubic yards, of which amount 44,200 yards were glacial drift, which was handled by three steam shovels; but as two of these shovels worked partly in glacial drift and partly in rock no reliable daily average could be obtained. The one steam shovel that worked entirely in glacial drift shows an average of about 390 yards per shift.

The solid rock excavated amounted to 23,400 cubic yards, of which 8,400 yards were loaded with steam shovels and 15,000 yards were taken out with inclines in 91 shifts, averaging about 164 yards per shift.

Section 2 also includes work in glacial drift and solid rock, aggregating 54,500

cubic yards, 15,900 yards of which was glacial drift handled by steam shovels at an average of about 444 yards per shift.

The solid rock amounted to 38,600 yards, which was taken out with two cableways that averaged 361 yards per shift.

Four channelling machines were employed day and night.

Section 3 has an estimate of 57,100 cubic yards, of which 6,900 yards are glacial drift which was handled by one steam shovel in twenty-one shifts, averaging about 330 yards per shift. Of the 50,200 yards of solid rock, 3,189 yards were taken out with a steam hoist in fifteen and one-half shifts, averaging 205 yards per shift. The remaining 47,011 yards of rock were moved by four cableways in 185 shifts, an average of 254 yards per shift.

Eight channelling machines were employed, about one-half of which worked both day and night.

One thousand five hundred cubic yards of retaining wall were laid during the month.

Section 4 shows a total of 53,700 cubic yards excavated during the month, of which 34,600 yards were glacial drift that was handled by four steam shovels in 106 shifts, an average of 326 yards per shift.

Two cableways moved 19,100 yards of solid rock in sixty-three and one-half shifts, averaging about 302 yards per shift. Two channelling machines were operated day and night.

Section 5 employed three steam shovels in excavating glacial drift, which amounted to 43,600 cubic yards, the shovels averaging 348 yards per shift. There was also excavated 7,300 cubic yards of solid rock, a part of which was moved with a cableway and the balance with derricks for use in building retaining walls. Three channelling machines were employed, one of which worked nights also a part of the time. From five to seven forces were engaged in building retaining walls to the amount of 5,000 cubic yards.

Section 6 gives an output of 33,100 cubic yards of glacial drift and 15,200 yards of solid rock. The glacial drift was moved by cableways, steam shovels and a small wheelbarrow force. The cableways averaged 571 yards each per shift, and the steam shovel 183 yards. The rock was moved by

two cableways averaging 218 yards each per shift, and by derricks for retaining wall masonry, of which there were 3,600 cubic yards laid. Six channelling machines were employed during the month, and a small force was also engaged in cleaning up the River Diversion.

Section 7—The work upon this section was wholly in solid rock and amounted to 43,200 cubic yards, which was moved by two Hulett derricks, averaging 194 yards each per shift; two Hulett cantilevers averaging 232 yards each, and one cableway averaging 352 yards per shift. Seven channelling machines were operated, two to three of which were also worked nights.

Two forces were engaged in building retaining walls, of which the estimate gives 1,300 cubic yards. A small force was also engaged for a few days rip-rapping the River Diversion levee.

Sections 8 to 14, inclusive, are far in advance of the contract requirements. The excavation of Section 13 was practically completed early in July. Section 10 will be finished during the current month, and Sections 9, 12, 11 and 8 will be done before the first of January, in the order named, with Section 14 following very closely.

Section 15 is improving, and the work is now sufficiently opened up and equipped that no apprehension need be felt concerning its progress. Its output for the month was 44,200 cubic yards of solid rock, with prospects of further increase.

Of the 39,284,657 cubic yards of material in the work, 25,415,115 cubic yards (64 7-10 per cent) had been excavated up to the first inst.

Respectfully submitted,

(Signed) U. W. WESTON,
Superintendent of Construction."

August 28,]

—2800—

[1895.

STATEMENT SHOWING AMOUNT OF WORK DONE DURING THE MONTH
OF JULY, 1895—(MAIN CHANNEL).

SECTIONS.	Amount Done During July.	Average Monthly Requirement.	Deficiency Under Monthly Requirement.	Excess Over Monthly Requirement	Per Cent. of Monthly Requirement.
O.....	\$ 4,800 53	\$ 13,271 42	\$ 8,470 89	.....	86.
N.....	3,312 00	10,674 33	7,362 33	.....	31.
M.....	6,792 10	6,274 34	.....	\$ 517 76	108.
L.....	14,932 60	8,682 82	.....	6,249 78	172.
K.....	16,600 00	11,559 57	.....	5,040 43	144.
I.....	17,678 75	11,398 49	.....	6,280 26	155.
H.....	19,644 60	12,498 57	.....	7,151 03	157.
G.....	14,929 88	15,277 64	347 76	.....	98.
F.....	6,637 50	13,493 77	6,856 27	.....	49.
E.....	14,877 00	23,230 53	8,353 53	.....	64.
D.....	16,364 81	19,215 65	2,850 84	.....	85.
C.....	15,674 50	13,443 10	.....	2,231 40	117.
B.....	15,350 58	12,901 32	.....	2,449 26	119.
A.....	6,645 62	24,012 30	17,366 68	.....	28.
1.....	37,681 80	44,801 03	7,119 23	.....	84.
2.....	38,830 00	20,950 88	.....	17,879 12	185.
3.....	46,891 00	29,177 70	.....	17,713 30	161.
4.....	32,234 00	22,982 67	.....	9,251 33	140.
5.....	35,131 50	18,387 51	.....	16,743 99	191.
6.....	32,133 00	26,827 41	.....	5,305 59	120.
7.....	35,977 00	25,622 15	.....	10,354 85	140.
8.....	36,162 75	21,799 22	.....	14,363 53	166.
9.....	39,065 20	19,325 00	.....	19,740 20	202.
10.....	30,000 00	22,458 34	.....	7,541 66	134.
11.....	32,492 50	19,455 05	.....	13,037 45	167.
12.....	31,279 75	20,413 93	.....	10,865 82	153.
13.....	9,917 75	21,140 02	11,222 27	.....	47.
14.....	51,830 00	22,648 61	.....	29,181 39	229.
15.....	26,078 00	23,607 65	.....	2,470 35	110.
Totals.....	\$689 944 72	\$555,526 02	\$ 69,949 80	\$204,368 50	124.20-100

TABLE OF AMOUNT OF WORK DONE (INCLUDING RIVER DIVER

SECTIONS.	CONTRACTORS.	MAIN CHANNEL.		RIVER DIVERSION.		RUBBLE MASONRY.
		Glacial Drift.	Solid Rock.	Glacial Drift.	Solid Rock.	
		Cubic Yds.	Cubic Yds.	Cubic Yds.	Cubic Yds.	
O	McMahon & Montgomery Co. et al.	579,925				
N	Hayes Bros. et al.	90,800				
M	The Heidenreich Co.	563,900				
L	The Heidenreich Co.	872,900				
K	Christie & Lowe	753,100				
I	Christie & Lowe	1,008,100				
H	Gahan & Byrne	283,191				
G	Gahan & Byrne	747,775				
F	Weir, McKechney & Co.	560,493		158,234		
E	Angus & Gindele	742,263		95,718		
D	E. D. Smith & Co.	1,454,800				
C	Western Dredging & Imp't. Co.	1,124,063		162,537		
B	Heldmaier & Neu	945,112		212,486		
A	Heldmaier & Neu	930,269		128,288		
1	Griffiths & McDermott	717,566	45,000	5,876		
2	McArthur Bros.	686,000	230,600	29,516		
3	Gilman & Co.	394,910	526,600			3,300
4	McArthur Bros.	954,100	131,000			
5	The Qualey Construction Co.	756,500	114,500			13,800
6	Mason, Hoge & Co.	634,900	225,000	116,000		12,300
7	Mason, Hoge & Co.	172,400	615,100	97,000	41,800	3,000
8	Mason, Hoge, King & Co.	41,600	914,600	56,600	96,900	1,600
9	Halvorson, Richards & Co.	71,700	911,500	37,700	16,000	
10	E. D. Smith & Co.	29,200	1,102,500	27,400	56,500	
11	Mason, Hoge & Co.	44,032	828,200	5,766	11,483	
12	Mason, Hoge & Co.	30,061	903,200	11,739		2,393.44
13	Mason, Hoge & Co.	32,822	1,014,400			5,743
14	Smith & Eastman	343,700	726,600			
15	Wright, Meysenburg, Sinclair & Carry	30,100	183,800			
Totals.....		15,546,282	8,477,600	1,144,850	222,683	42,136.44

Main Channel, glacial drift, including 55,604 cubic yards collateral

Main Channel, solid rock.....

River Diversion, glacial drift.....

River Diversion, solid rock.....

Rubble Masonry.....

Total amount required to be done August 1st, 1895.....

Total amount done August 1st, 1895.....

Total amount short as per contracts.....

Total value of work done under contracts August 1st, 1895.....

Reserved..... { 12½ per cent.....

{ 10 per cent.....

Total value of vouchers paid, including those of August 1st, 1895..

Total value of vouchers paid for collateral work, including those of

Total disbursement, Construction Account.....

NOTE.—*Overhaul to Levee—Section 1 not included.

SION) AND CONDITION OF WORK ON CONTRACTS, AUGUST 1ST, 1895.

Total value of work done on each section, August 1st, 1895.	Total value of work required to be done to August 1st, 1895.	Amounts behind as per contracts.	Amounts ahead as per contracts.	Average monthly progress called for in contracts.	Average monthly progress necessary to finish in August 1st, 1895, to time of completion.	Progress made during month of July, 1895.
\$ 121,172 61	\$ 215,490 00	\$ 94 817 39	.....	\$14,366 00	\$ 22,841 19	\$ 4,800 53
20 884 00	160,114 95	139 230 95	.....	10 674 33	23,861 19	3,312 00
122 366 30	100 859 44	.....	\$ 21,976 85	6,274 34	4 128 43	6,792 10
171,961 30	138 925 12	.....	33 036 18	8 682 82	6 004 19	14 932 60
188,275 00	1 4 953 12	.....	3 321 88	11,559 57	11,731 43	16,600 00
252,025 00	182 375 64	.....	69,649 36	11,398 49	5 061 60	17,678 75
82,125 39	199,897 12	117,771 73	.....	12 493 57	24,985 85	19,644 60
209,377 00	244,442 24	35 065 24	.....	15,277 64	18,749 39	14,929 88
173 929 16	224 819 01	50,889 85	.....	13 493 77	15,434 52	6,637 50
229 079 28	387 647 58	158 568 30	.....	23 230 53	39,921 05	14 877 00
384 612 75	480,391 25	95 778 50	.....	19,215 65	29,540 95	16 364 81
302,351 00	337,392 75	65 041 75	.....	14,695 71	22,031 33	15,674 50
312,551 46	365 939 50	53,888 04	.....	14,637 58	20,879 94	15 350 58
324,133 08	630 071 25	305 888 17	.....	25,202 85	57,128 97	6,645 62
*326,541 56	662,029 08	335,487 52	.....	44,801 03	74,652 70	37 681 80
529,215 98	634,673 80	105,357 82	.....	21,152 46	31,405 39	38,830 00
610,830 70	603,347 70	.....	7,483 00	29,177 70	30,312 19	46,891 00
561,639 00	712,462 77	150,823 77	.....	22,982 67	37 534 95	32 234 00
353,550 50	550 819 06	207,268 56	.....	18,387 51	37,865 87	35,131 50
406,888 00	487,044 15	80,156 15	.....	26,896 13	35,435 40	32,133 00
562,615 50	552 450 80	.....	10,164 70	25 699 42	25,710 70	35,977 00
786,828 25	767 328 96	.....	19 499 29	23,979 03	23 247 48	36,162 75
741,691 50	636 807 36	.....	104,884 14	19,900 23	11 328 29	39,065 20
941,350 00	760 968 00	.....	180 382 00	23,780 25	6,364 03	30,000 00
680,509 65	631 023 04	.....	49,486 61	19,719 47	16 048 13	32,492 50
736,775 45	656 017 28	.....	80 758 17	20,500 54	13 502 66	31,279 75
786 898 22	676,480 64	.....	110,417 58	21,140 02	8,976 03	9,917 75
633 094 00	724,755 52	91,661 52	.....	22 648 61	34 732 92	51,830 00
117,111 00	236 076 50	118 965 50	.....	23,607 65	34,647 27	26,078 00
\$11,670,432 64	\$13 185,033 63	\$ 2 205,660 76	\$691,059 77	\$565,575 57	\$724,565 04	\$689,944 72

channel.....	Cubic Yards.
.....	15 596,282
.....	8,477,600
.....	1,144,850
.....	222,683
.....	42,136.44
.....	\$13,185,033 63
.....	11,670,432 64
.....	\$1,514,600 99
.....	\$11,670,432 64
.....	\$1,442,716 68
.....	99,951 24
.....	1,542,667 92
.....	\$10,127,764 72
August 1st, 1895.....	†647 238 67
.....	\$10,775,003 39

†Overhaul to Levee—Section 1 included.

"CHICAGO, Aug. 14, 1895.

Mr. Isham Randolph, Chief Engineer:

DEAR SIR—The work of the Division of Drafting and Designing for the month of July was as follows:

The survey party has continued work under the direction of Mr. Seymour engaged in the remeasurement of the Main Channel.

The preparation of plans for regulating works and tail race was continued.

Some further time was given to the collection of data in connection with the lake level question as affected by the Main Channel.

The determination of the hydraulic elements of the Chicago River and its capacity for flow was continued.

The testing of cement for use in retaining walls was continued, as was also the work of preparing record photographs and the maintenance of water gauges.

The platting of the notes of the contour map of the valley between Sections 12 and 20, Township 37 North, Range 11 East, was nearly finished.

The platting of the contour map between

Lockport and Joliet and the lower Illinois River was continued.

Outside of the routine work of the Division, the following plans were finished:

Tracings of Nos. 6, 7, 8 and 9 of the maps of the Chicago River survey; a profile of the Pan Handle Railroad over the right of way of the Sanitary District; two profiles of the crossings over the Channel at Lemont and Romeo; cross-sections of the spoil bank on Stephens street, Lemont; a plan for highway trestles at Lemont and Romeo; a plat showing the proposed location of the C., M. & N. R. R. crossing; a right of way map of Sag Island for filing in the County Recorder's office of Will County; a tracing of the profile of the crossings of Western Avenue and the Southwest Boulevard; a tracing of a map showing the Illinois and Michigan Canal strip near the range line at Summit; a copy of the profile of Contract Sections 1, 2, 3 and 4, and a copy of the original profile of Contract Sections A to D.

Expenses for August will be about the same as for July.

Very respectfully,

(Signed)

THOS. T. JOHNSTON,
Assistant Chief Engineer."

SANITARY DISTRICT OF CHICAGO — ENGINEERING DEPARTMENT.

CLASSIFIED STATEMENT OF EXPENDITURES DURING THE MONTH OF JULY, 1895.

CLASSIFICATION.	Eng. Expenses.		Construction.		Total for Month.		Previously Reported.		Total to Date.	
	Salaries.	Supplies, Etc.	Regular.	Extra.	Eng. Expenses	Construction	Eng. Expenses.	Construction	Eng. Expenses.	Construction
Preliminary Sundries.....							\$130,633 75		\$130,633 75	
Locating Route.....							32,222 04		32,222 04	
Borings and Test Pits.....							10,266 50		10,266 50	
Maps, Plans and Specifications.....	\$ 705 50	\$ 3 56			\$ 709 06		34,571 14		35,280 20	
Chicago River Survey.....							17,082 66		17,082 66	
Survey of street lines adjacent to Chi. River.							7,476 32		7,476 32	
Right of Way.....	278 50	40			278 90		19,604 99		19,883 89	
Flood Measurements.....	243 00	57 19			300 19		16,083 82		16,384 01	
Disposal of Floods at Joliet.....	305 00	11 50			316 50		22,101 59		22,418 09	
Regular Construction.....	11,090 12	436 04	\$608,538 66		11,525 16	\$608,538 66	271,693 42	\$9,538,980 64	283,219 58	\$10,147,519 30
Extra Work—Main Channel.....							13,455 51		13,455 51	
Diversion North Branch Chicago River.....							9,723 42	333,707 41	9,723 42	333,707 41
Levees, Trestles and Embankments.....							3,643 51		3,643 51	
Spillway.....						1,839 00	813 75	179,618 60	813 75	181,457 60
Tow Path.....							1,754 91	20,518 41	1,754 91	20,518 41
Building Western Stone Company's Bridge.....							5,246 04		5,246 04	
Building Stephens Street Bridge.....							1,157 05	19,029 05	1,157 05	19,029 05
Building Atchison, Topeka & Santa Fe Bridge.....							985 66	22,329 89	985 66	22,329 89
Building Mt. Forest Foot Bridge.....							770 72	18,738 80	770 72	18,738 80
Repairing and Moving Bridges.....							32 17		32 17	
Office Building at Sag.....							1,030 13	7,756 19	1,030 13	7,756 19
Saving of Building at Sag.....							2,339 43		2,339 43	
Mortar, Sand and Cement Tests.....	815 00	26 23			841 23		4,037 79	781 63	4,879 02	781 63
Saving of Dimension Stone.....				700 00		700 00		8,908 00		9,008 00
Erosion Test.....							1,406 75		1,406 75	
Temporary Sanitary Relief.....							237 60		237 60	
Photographs of Works.....	362 50	40 25			302 75		2,309 29		2,702 04	
Public Reports.....							1,138 14		1,138 14	
Measurement of Main Channel.....	1,303 40	52 02			1,355 42		1,123 68		2,479 10	
Effect of Main Channel water on Lake Levels.....	95 00	29 38			124 38		461 00		585 38	
Improvement South Branch Chicago River.....	175 00				175 00				175 00	
General Account.....	740 00	20 11			760 11		68,232 60		68,992 71	
Totals.....	\$16,013 02	\$ 676 68	\$608,538 66	\$2,339 00	\$16,689 70	\$611,077 66	\$604,380 77	\$10,103,884 13	\$381,070 47	\$10,774,961 79

REPORT ON LABOR CONDITIONS ON MAIN CHANNEL.

The Clerk presented a report from the Chief Engineer, with reference to and accompanied by report from Labor Statistician Gruenhut, showing labor conditions on the Main Channel, wages paid laborers, etc., as set forth in the report; and the report was read.

Mr. Boldenweck, seconded by Mr. Alt-peter, moved that the report and enclosure be ordered printed and placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT, WITH ENCLOSURE:

"CHICAGO, Aug. 28, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I submit herewith report of Mr. Joseph Gruenhut, Labor Statistician, showing the condition of labor on the Channel, the wages paid to laborers of different grades, and the conditions existing on the line affecting the daily life of the men engaged in construction.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

(ENCLOSURE.)

"Labor, Wages and Cost of Living on the Drainage Channel.

The influences that have established and sustained the rate of wages on the Drainage Canal are largely attributable to the continued efforts of the Drainage Trustees that laborers should not get less than \$1.50 for a day's work. When work commenced on the channel the general stagnation in business had caused a fall in wages in all industries, with reductions in the number of men employed, and the contractors by concerted action could have fixed the rate for common labor at 10 to 12½ cents per hour; but the Board of Trustees upheld the minimum rate of 15 cents per hour for common labor, which is higher than is paid in Chicago, and thereby also influenced the wages paid in stone quarries at Lemont and other places, acting as a regulator where a trade union of laborers could not be organized to maintain the rights of labor.

Powerful machinery for digging and

hoisting, steam shovels, excavators, inclines, conveyors, derricks, cantilevers, cableways, channellers, steam drills, pumps, etc., multiplied the effective productiveness of human labor, so that the contractors were encouraged to pay fair wages to their laborers, mechanics and artisans. The men work by the hour and are not rushed or hurried; there are always great numbers of laborers resting and others take the vacant places in a sort of rotation, which requires as much as a threefold number of men from whom to fill the needed average working force for each day. A large proportion of laborers do not intend to work full time and many do not work more than they must work to pay their living expenses. This class, who come and go when it suits their convenience, is estimated by thousands, and is nicknamed as "hobos." They are mostly native born, of nomadic habits, but the immigrants attempt to get as much work as they can do in this climate, and stick to it except on their church holidays, which are their days of rest and recreation. Machinery does the hardest work of digging and shoveling, and horse-power is used in removing the top soil, more than 1,000 horses and mules being thus employed. The work done by hand in the rock sections is hard on men who are not used to it. The rock is blasted and then broken so that it can be thrown into iron buckets or loaded on trucks for removal. It requires strength, endurance and some skill to handle the shattered rock of all sizes so as to avoid being hurt or hurting somebody else through carelessness or lack of skill in moving the stuff. The work lasts ten hours during the day and eleven hours at night, but it is not as continuous and hurried as building operations in Chicago are conducted. The eight-hour law is nullified by the Supreme Court; the contractors could not arrange for three shifts, nor do the laborers ask for short work. The masses on the channel do not average fifty hours a week in the hard work of digging and loading in the rock and earth, and only a small proportion of the whole number of these laborers keep at work every day of the week or month. They are not obliged to do so, and it is not their habit to work without interruption. Men may stop work at any time, get their wages and after spending

them go to work again on some one of the twenty-nine sections of the Drainage Channel, and the number of those who work but part of the time is so large that especially after pay day it is difficult to wake up a full working force in the channel. This sort of transient workers corresponds with the floating population of some lodging house localities in Chicago. Laborers of different nationalities work together in the same squad and live peaceably in the same camp. There have been no race fights among them and wages of laborers are the same American standard for each and all, namely: a minimum rate of 15 cents an hour for common labor and fair wages for mechanics and engineers, according to the rates which are customary in and near Chicago. For summer months the following working force was employed (more or less) on the channel by the contractors on all sections: 45 superintendents, 32 bookkeepers and clerks, 280 foremen and timekeepers, 3 civil engineers, 73 steam shovel engineers, 73 crane men, 12 first lever men, 8 second lever men, 12 first hookers, 12 second hookers, 9 riggers, 7 cableway repairers, 240 engineers and pumpmen, 275 firemen, 50 trainmen, 210 drillers, 113 channellers, 11 electricians, 37 machinists, 100 stone masons. 101 carpenters and 17 helpers, 69 blacksmiths and 46 helpers, 12 boilermakers and 7 helpers, 1 oil man, 1 tool man, 50 water men and boys, 450 teamsters, 6,000 laborers; a total of 8,356.

The number of persons employed in the commissary and in the camp boarding houses may be estimated at 344, which would make a grand total of 8,700 persons directly paid in the camps of the Drainage Channel.

The wages of one full working day of 8,245 men amounted to \$14,150, being an average of \$1.71 per man per day.

Those working by the day received the following: 6,124 men at \$1.50, 10 at \$1.60, 30 at \$1.65, 603 at \$1.75, 354 at \$2.00, 43 at \$2.25, 100 at \$2.50, 86 at \$2.75, 286 at \$3.00, 12 at \$3.25, 45 at \$3.50, 30 at \$4.00, 4 at \$4.50, and 50 boys at 75 cents.

Those paid by the month received at the following monthly rates: Forty men at \$50, 10 at \$55, 76 at \$60, 8 at \$65, 7 at \$70, 95 at \$75, 11 at \$80, 11 at \$85, 70 at \$90, 2 at \$95, 40 at \$100, 1 at \$110, 3 at \$115, 80 at \$125, 1 at \$130, 1 at \$140, 3 at \$150, 1 at \$350.

These figures show that various kinds of skill are paid different rates of wages, and the skilled mechanics are mostly hired by the month.

Wages in Chicago are kept up by trades-unions, and the expenses of living in this city are higher than in the country because the style and variety of living is far more expensive and opportunities for spending money are more frequent. This must be kept in mind when the wages on the Drainage Channel are compared with the cost of living.

There are many saloons near the sections of the Channel, but a large proportion of the laborers are not habitual frequenters of saloons, preferring to buy the beer by the keg or half barrel and drinking the beer in their cabins, paying in company, as they call it. The Austrians, Italians and Poles on some sections board and drink in partnership at an individual expense of about \$15 00 per month, and they consider it good living under the circumstances.

The average wages on the Drainage Channel are as follows:

Daily Wages — Laborers, \$1.50-\$1.75; teamsters, \$1.50-\$1.63; drillers, \$1.75-\$2.00; trainmen, \$1.75-\$2.00; firemen, \$1.75; channellers, \$2.50-\$3.00; first levermen, \$2.20; second levermen, \$1.50; first hookers, \$1.75; second hookers, \$1.50; riggers, \$2.25; cableway repairers, \$2.25; machinists, \$2.00-\$2.50; carpenters, \$2.00-\$2.25; blacksmiths, \$2.50-\$3.00; boilermakers, \$3.50; stonemasons, \$3.50-\$4.00.

Monthly Wages—Superintendents, \$100-\$150; timekeepers, \$50-\$100; bookkeepers and clerks, \$60-\$125; foreman, \$60-\$80; engineers and pumpmen, \$50-\$80; electricians, \$75-\$90; civil engineers, \$90-\$100; steam shovel engineers, \$125; cranemen; \$90-\$100.

Trade unions are impracticable along thirty miles of a channel in an almost uninhabited stretch of territory along the Illinois and Michigan Canal, and the tracks of two trunk railroads. It would not be practicable to picket the route against new comers, and this explains the constant stream of laborers to fill vacancies in the working forces. There has been from the beginning absolute free trade in labor on this public work, and the contractors on the whole have not reduced wages by attempting to import low-priced working people,

and the few hundred colored teamsters and laborers earn the same wages as the white laborers. The Italians are paid for the same work the same wages as the native born laborers. This is a great achievement in the necessary amalgamation of the working forces in a mixed population by raising all laborers to the high American standard of earning a living.

The work on the Drainage Channel, including the commissary and boarding houses, employs about 8,700 breadwinners, at fair wages, which are mostly spent for a good living, not much of it being hoarded. A very large proportion of the laborers and mechanics are unmarried and spend most of their money soon after pay-day.

The contractors furnish boarding and lodging for many thousand men, thereby securing a working force which otherwise could not be kept up. The greater part of the Drainage Channel is too far distant from settlements which could afford sufficient living accommodations, so that most sections were supplied by the contractors with frame buildings for the workingmen. They are scattered in great numbers along the Illinois and Michigan Canal, the railroad track and the Drainage Channel.

On a few sections colored men (only a few hundred) are employed as laborers and teamsters; they board in small numbers together and in boarding houses at \$3 50 per week. They earn the same wages as white men, but they do not work so many consecutive days. They live in overcrowded cabins and shanties, with hardly any furniture and scanty bedding. It is said that some of them work steady and manage to save a part of their earnings. Colored laborers work on Sections 6, 8, 11, 12, 14 and 15, in small proportion to the Austrians, Italians, Irish and Swedes; very few work on the earth sections. They are not employed in separate gangs, but work on the channel mixed among the mass of white laborers, and there is no discord of races among the hard workers in the pit.

On Sections A, B, 10, 11, 12, 14 and 6, many Austrians and Italians are employed. On Section 9 mostly Swedes. On Sections C, D, E, F, G, H, 1, 2, 3 and 4, mostly Irish. Some sections are worked by a very mixed crowd. Germans and Anglo Americans are very few among the common

laborers; they leave soon after beginning work and seldom return to try again.

Carpenters, blacksmiths, machinists, engineers, cranemen, levermen, channelers, drillers, firemen and masons are mostly native born earning fair wages at steady work. They are few on each section compared with the large number of laborers and remain in their positions as long as they keep sober and behave themselves.

The health of the workers on the Drainage Channel is very good; bad accidents happen to men working in the pit, in inclines, cableways, steam shovels and other excavations. The employes each pay 50 cents a month to a hospital fund, for which they receive medical attendance in case of sickness and accidents. There are two hospitals in Mount Forest, and certain contractors utilize hospitals in Chicago and Joliet. The dry weather has been very favorable to the general health.

Board in the camps is from \$1 to \$1.50 per week. About two thirds of all employed men, mostly single men, board in the camps so as not to waste time in walking great distances. The married men live with their families in huts, cabins, tents and cottages along the channel, paying a mere nominal rent to the contractors who erected these frame houses for their working forces and collect about \$5 a month rent from a family cottage and 50 cents to \$1 a month from each occupant of a dwelling used by men who board together in company so called, chiefly living on canned goods and buying vegetables, milk, bread, fresh meats, etc., from the pedlers' wagons which run into all settlements. The beer wagons follow regular routes, and bottled beer is a favorite drink, especially in the Austrian settlements near Willow Springs and Lockport.

Counting men, women and children, the population in the camps and dwellings near them in the neighboring villages, there are over 10,000 inhabitants in temporary frame dwellings, which will represent no commercial value after the completion of the Drainage Channel, and the builders will not have collected as rent more than a fractional part of the cost.

The contractors do not make any money as landlords or as boarding house keepers, but they are interested in using their men well so as to get full work out of them.

When provisions are shipped by the car-loads and prepared in kitchens for hundreds of men for regular meals the food is more nourishing than that furnished at the table of a single family or a small restaurant or boarding house along the route of the channel and in the neighboring villages.

The landlords in Lemont, Lockport, Romeo, Willow Springs, Summit, Sag Bridge, Mount Forest, Hawthorne and other villages have raised rents of dwellings and stores and especially saloons which have increased in numbers all along the line, mostly in Lemont, where they seem to outnumber all other mercantile trades. An extensive inquiry into the question of rents in many places along the channel has shown that the ground rent has reached fancy prices in many main streets in the neighborhood of the canal sections. There is not a vacant store or dwelling in most of these places and the rents are as high as in the workingmen's quarters in Chicago, and even higher. The landlord of town lots is the principal beneficiary of public and private enterprise, reaping the reward of other men's successful efforts. On account of such high rents board and lodging for drainage laborers are as high as \$4.00 and \$1.50 a week and goods in the stores are higher than in Chicago. About 2,500 men employed on the Drainage Channel live in these towns and villages and help to increase profitable trade in common necessities of life, like food, drink, clothing and furnishing goods, shelter and various comforts of civilization.

On most sections are commissary stores for the accommodation of the workmen, where they can get tobacco, clothing, boots and shoes and whatever else they wear. These are not truck stores in the bad sense of certain mining districts; the workmen need not buy there in order to keep their jobs, and they are not charged more than in other country stores and can buy on credit for themselves and families. The credit system is very handy to the wives of workmen, whose husbands otherwise would spend the cash pay in saloons and lose time on a spree.

There is a great difference in the proportion of mechanics to laborers on the earth and on the rock sections. Among 8,700 men there are more than 1,700 mechanics, foremen, clerks and superintendents earning \$2.00 a day and more, while 7,000 men

average \$1.50 to to \$1.75 a day of 10 hours. About one-third of the men work 11 hours at the night shift, getting an hour's extra pay as compared with the day shift; and some work must be done on Sunday to prepare for the next day. For every dollar paid to a skilled artisan and mechanic three dollars are paid out to mere physical strength of handy laborers and helpers, which shows that it still pays to work at skilled trades in connection with costly labor aiding machinery. On most sections the burden of labor of men and teams is more or less relieved by powerful machinery; but on some parts of the work it requires the full strength of men and the great endurance of the mules.

Capital in the form of giant tools of great cost in construction and maintenance multiplies the effective working power of the human hands to such a degree that the taxpayers of Chicago can undertake this great Drainage Channel with the assurance of success for a reasonable amount of money.

(Signed)

JOSEPH GRUENHUT,
Labor Statistician."

REPORT ON COMMUNICATION FROM MCARTHUR BROS., ON PRICE OF CEMENT MASONRY WALLS ON SECTIONS 2 AND 4.

The Clerk presented a report from the Chief Engineer, with reference to and accompanied by communication from McArthur Brothers, Contractors for Sections 2 and 4, concerning final offer made said firm as directed at the meeting held August 21, 1895, (page 2779 of the Proceedings), for cement masonry retaining walls to be built in place of dry rubble walls on said sections, as set forth in the report; and the report was read.

Mr. Boldenweck, seconded by Mr. Eckhart, moved that the report and enclosure be ordered printed and placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT, WITH ENCLOSURE:

"CHICAGO, Aug. 27, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Pursuant to your order of the 21st inst. I made a formal offer to McArthur Brothers of \$3.50 per cubic yard for rubble masonry wall laid in

cement in accordance with our specifications. On yesterday I received from said McArthur Brothers a communication, which is submitted herewith, declining to accept your offer of \$3.50, and claiming their right under the contract to do this work on force account with 15 per cent added, unless the Board elects to arbitrate the cost of cement masonry over the cost of dry masonry in which case they will agree to said arbitration.

Respectfully submitted,
(Signed) ISHAM RANDOLPH,
Chief Engineer."

(ENCLOSURE.)

"CHICAGO, Aug. 24th, 1895.

Mr. Isham Randolph, Chief Engineer,
Sanitary District, Chicago:

DEAR SIR—We have received your letter of August 23d, wherein you state that you have been authorized to tender us the sum of \$3.50 per cubic yard for cement masonry retaining walls, on Sections 2 and 4.

We regret to say that we do not see our way clear, at this late date, to accept this arbitrary amount as a final adjustment of the question at issue between the District and our company, and we again ask that the amount to be paid us be arrived at under the provision in our contract for extra work, which provides that we shall be paid actual cost with 15 per cent added. This can be accurately arrived at by the force account and bills for material, and is in accord with the plain terms of our contract. But if you prefer to adjust in advance of the actual doing of the work, the amount to be added to our dry wall price by reason of the use of cement mortar, then and in that case we will consent to submit the questions involved to arbitration. We feel that if this question were left to the Engineer to adjust, as is provided in our contract, we would be able to arrive at an adjustment upon some equitable basis. We feel the importance to the District of adjusting this matter while there is sufficient rock in the sections to build these walls. We will be glad to take up the question with you at any time that you can give us a hearing, and shall endeavor to come to some just and equitable agreement.

Yours respectfully,
(Signed) MCARTHUR BROTHERS."

PLANS FOR CONTROLLING WORKS AT LOCKPORT.

The Clerk presented a report from the Chief Engineer, with reference to plans and specifications for controlling works at Lockport, as set forth in the report; and the report was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the report be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the report was ordered printed and so referred

The following is

THE REPORT:

"CHICAGO, Aug. 28, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The plans for the controlling works at the Lockport end of our Channel have been completed and we are prepared to submit specifications for the work, if it is your desire to advertise it for contract this season.

As there is a large amount of iron work involved it seems to me desirable to place it under contract this season and let the masonry be done during the next season.

Respectfully submitted,
(Signed) ISHAM RANDOLPH,
Chief Engineer."

SERVICES COMMEMORATING COMPLETION OF SECTION 10.

The President announced that exercises commemorating the completion of Section 10 of the Main Channel would be held on Tuesday, September 3, 1895, at 3 o'clock P. M., at the point where work on the Channel was inaugurated September 3, 1892, on which occasion a tablet would be set in the wall of the Channel, and an address delivered by Judge Samuel P. McConnell.

ORDER FOR SURVEYS OF SOUTH FORK AND NORTH BRANCH OF CHICAGO RIVER.

Mr. Boldenweck presented an order directing the Chief Engineer to make such surveys of the South Fork and North Branch of the Chicago River as will supply the data for a project for the improvement and cleansing of said South Fork and North Branch, as provided in the order, and to report thereon to the Board; and the order was read.

Mr. Boldenweck, seconded by Mr. Eckhart, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, the order adopted, and the Chief Engineer directed as provided therein.

The following is

THE ORDER:

"WHEREAS, The surveys of the Chicago River from the Lake to Bridgeport have been completed and the Chief Engineer has reported a project for the improvement of said River which, if developed, will supply a flow of 300,000 cubic feet per minute to the Main Channel of the Sanitary District; and

WHEREAS, Reliable data is not in possession of the Engineering Department from which to formulate projects for cleansing the South Fork and the North Branch of the Chicago River; and

WHEREAS, It is essential to the carrying out of the work of the Sanitary District in the full scope of its mission that both the South Fork and the North Branch should be cleansed and kept pure and wholesome; therefore be it

Ordered, That the Chief Engineer proceed at once with the force which he has available for this work to make such careful and accurate surveys of the South Fork and of the North Branch of the Chicago River and the territory adjacent thereto as will supply the data for working out a project for the improvement and cleansing of the said two branches of the Chicago River;

And, further, When this data has been procured that projects covering the objects set forth in this order shall be matured and presented to this Board for its approval."

ADJOURNMENT TO SPECIAL TIME.

Mr. Eckhart, seconded by Mr. Kelly, moved that when the Board adjourn it do adjourn to meet Thursday, September 5, 1895, at 1:30 o'clock, P. M.

The motion prevailed unanimously, and it was so ordered.

OFFICES TO BE CLOSED ON "LABOR DAY."

Mr. Russell presented an order, directing that the offices of the District be ordered closed on Monday, September 2, 1895, the same being "Labor Day"—a legal holiday; and the order was read.

Mr. Russell, seconded by Mr. Altpeter, moved the adoption of the order.

The motion prevailed unanimously, and the President declared the order adopted and the offices of the District ordered closed as provided therein.

The following is

THE ORDER:

"Ordered, That the offices of the Sanitary District of Chicago be and the same are hereby ordered closed on Monday, September 2, 1895, the same being "Labor Day"—a legal holiday."

ADJOURNMENT.

On motion of Mr. Boldenweck, seconded by Mr. Gilmore, the Board then adjourned to meet Thursday, September 5, 1895, at 1:30 o'clock P. M., pursuant to motion.

THOS. F. JUDGE,
Clerk.

August 28,]

—2811—

[1895.

Edmund J. Lawrence

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

SEPTEMBER 5, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

ADJOURNED MEETING.

The adjourned session of the two hundred and eightieth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Thursday, September 5, 1895, at 1:30 o'clock P. M., pursuant to motion.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly and Wenter — six (6), and subsequently Messrs. Russell and Prendergast, making a total of eight (8) members, were present.

VOUCHERS.

The Clerk presented the following vouchers:

PAY ROLLS.

Eng. Dept., Chief Engineer's roll (Aug., 1895).....	\$1,441 67
Eng. Dept., Division of Construction (Aug., 1895).....	5,597 80
Eng. Dept., Division of Drafting and Designing (Aug., 1895).....	2,660 30
Eng. Dept., Division of Records (Aug., 1895).....	882 50
Eng. Dept., Special Service roll (Aug., 1895).....	5,392 90

Eng. Dept., Discharged	
Men's roll (Aug., 1895) \$	145 60
	<hr/> \$16,120 77
Clerical Dept., Clerk's	
roll (Aug., 1895).....	891 67
Law Dept., Attorney's	
roll (Aug., 1895).....	\$1,288 32
Law Dept., Joliet roll,	
(Aug., 1895).....	458 33
	<hr/> \$1,746 65
Treasury Dept., Treas-	
urer's roll (Aug., '95)	166 67
General Account, Gen-	
eral roll (Aug., '95) \$	250 00
General Account, Tow-	
path roll (Aug., '95)	233 75
General Account, Trus-	
tees' roll (Aug., '95)	2,333 33
	<hr/> 2,817 08
Police Dept., Marshal's	
roll (Aug., 1895).....	4,074 20
	<hr/>
Total.....	\$25,817 04

ENGINEERING DEPARTMENT.

R. B. Seymour (Special	
Engineer — Services	
Re-Measurement	
Main Channel).....	300 00

LAW DEPARTMENT.

Jos. Donnersberger,	
(Expert—right of way	
services, Aug., 1895)	300 00
	<hr/>
Grand total.....	\$26 417 04

Mr. Boldenweck, seconded by Mr. Russell, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

REPORT ON SETTLEMENT WITH MCARTHUR BROTHERS OF PRICE OF CEMENT MASONRY WALLS ON SECTIONS 2 AND 4.

The Clerk presented a report from the Chief Engineer, with reference to and accompanied by communication from McArthur Brothers, contractors for Sections 2 and 4, accepting final offer made as directed at the meeting held August

21, 1895, (page 2779 of the Proceedings) for cement masonry retaining walls to be built in place of dry rubble walls on said sections; and the report and enclosure were read.

Mr. Eckhart, seconded by Mr. Altpeter, moved that the report and enclosure be ordered printed and referred to the Joint Committee on Engineering and Finance, with instructions to the Attorney and Chief Engineer to draw an agreement for the building of said walls, to be submitted to the Board at the next meeting.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT, WITH ENCLOSURE:

"CHICAGO, Sept. 4, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I transmit herewith letter of this date from McArthur Bros. accepting \$3.50 per cubic yard as the compensation to be paid them for retaining walls to be built on Sections 2 and 4 in accordance with the specifications of this District for cement retaining walls, which amount was offered them under your order of August 21st, page 2779 of Proceedings.

The Attorney has prepared a contract to meet the conditions of this case.

Yours truly,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

(Accompanied by one enclosure.)

(ENCLOSURE.)

"CHICAGO, Sept. 4th, 1895.

Mr. Isham Randolph, Chief Engineer, Sanitary District, Rialto Building, Chicago:

DEAR SIR—We have now fully considered the proposition made through you by the Board of Trustees, to pay us \$3.50 per cubic yard for cement masonry retaining walls on Sections 2 and 4 of the Main Drainage Channel, to be built in accordance with the specifications of the District for such walls, and we hereby notify you that we accept your proposition as contained in your letter of August 23rd, 1895.

Respectfully yours,

(Signed) MCARTHUR BROS.'

REPAIRS TO LEVEE ON SECTION 7.

The Clerk presented a report from the Chief Engineer, asking authority to have the levee on Section 7 raised to grade at a cost not exceeding \$1,000, as set forth in the report; and the report was read.

Mr. Kelly, seconded by Mr. Cooley, moved that the report be ordered printed and placed on file, and the authority requested therein granted.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—six (6). Excused and not voting—Mr. Altpeter—one (1). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed and placed on file, and the authority requested therein granted.

The following is

THE REPORT:

"CHICAGO, Sept. 5, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have had levels taken on the levee on Section 7 and find that for a considerable distance on the east end of the levee it is from two to three feet below grade, a condition which is a serious menace to the safety of the work as a flood may occur at any time, I therefore ask authority to have this levee filled up to grade and properly protected.

I would state here that the authority heretofore given me to place 15,000 yards of hard material on Sections 6 and 7 has been exhausted on Section 6 the levee there having settled to such an extent that it took this entire volume of material to make that section safe. Mr. Miller estimates that the cost of bringing the levee to grade on Section 7 and properly protecting it will be \$1,000. Having explained this situation to several members of your Honorable Body I ask that you pass an order at this meeting authorizing me to have this work done as it is a serious risk to leave the levee in its present condition.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

PAYMENT FOR "LOMAX" LAND.

Mr. Eckhart, Chairman, for the Joint Committee on Finance and Engineering, presented an order authorizing and directing the Clerk to pay John A. Lomax,

on the voucher of the Attorney, a certain sum, as set forth in the order, for certain right of way lands in DuPage county, in full of verdict for said lands, as provided in the order; and the order was read.

Mr. Eckhart, seconded by Mr. Kelly, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the order adopted and the Clerk authorized and directed to pay John A. Lomax, on the voucher of the Attorney, for said right of way lands in Du Page County, in full of verdict for said lands, as provided in the order.

The following is

THE ORDER:

"*Ordered*, That upon the entry of the verdict in the Circuit Court of Will County, Illinois, against the Sanitary District of Chicago for the sum of five thousand, two hundred and fifty (\$5,250.00) dollars, being the compensation to be paid John A. Lomax and Maria Lomax, for the lands hereinafter described which are to be taken for the uses of the District, and further, upon the delivery of a duly executed quit-claim deed of all the interests of said John A. Lomax and Maria Lomax in and to said premises, the Clerk of the District be and he is hereby authorized and directed to pay, on the voucher of the Attorney, to said John A. Lomax the sum of five thousand, two hundred and fifty (\$5,250.00) dollars, said sum to be in full satisfaction and payment for the following described real estate, to-wit:

The undivided half interest in Tract 3b, described in the amended petition as follows:

That part of the south fraction of the southwest fractional quarter ($\frac{1}{4}$) of Section fifteen (15) in Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, bounded and described as follows:

Beginning at the point of intersection of the north line of lot five (5) of the subdivision made by the Circuit Commissioners in the certain cause lately pending in the Circuit Court of Du Page County, Illinois, wherein Rudolph Nunnemacher was complainant and John A. Lomax, Maria Lomax, Gustave A.

Bodenschatz, Mary Bodenschatz, Alexander E. Guild Jr., William E. Witt, P. A. Witt, Eric P. Linn and Mary Linn were defendants as shown by the plat of said subdivision filed in the said Court with the report of said Commissioners, with the west line of said southwest fractional quarter ($\frac{1}{4}$); thence north along said west line to the southeasterly margin of the Desplaines River; thence northwesterly at right angles to the general course of said river there to the center thread of the current of said river; thence northeasterly along said thread to its intersection with a line drawn northwesterly from the point of contact of the north line of said southwest fractional quarter ($\frac{1}{4}$) with the southeasterly margin of said Desplaines River and at right angles to the general course of said river there; thence southeasterly along said line to said southeasterly margin; thence east along said north line of said southwest fractional quarter ($\frac{1}{4}$) to the intersection of said line with the boundary line of lot four (4) of the said subdivision made by the Circuit Court Commissioners as aforesaid; thence southwesterly and southerly down and along the boundary line of said lot four (4) to its intersection with the northerly line of lot five (5) as aforesaid; thence westerly along said northerly line of lot five (5) to the place of beginning.

Also all of Tract 3c, described in the amended petition, as follows:

That part of the south fraction of the southwest fractional quarter ($\frac{1}{4}$) of Section fifteen (15), in Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, bounded and described as follows:

Lot five (5) of the subdivision made by the Circuit Court Commissioners in the certain cause lately pending in the Circuit Court of DuPage County, Illinois, wherein Rudolph Nunnemacher was complainant and John A. Lomax, Maria Lomax, Gustave A. Bodenschatz, Mary Bodenschatz, Alexander E. Guild, Jr., Wm. E. Witt, P. A. Witt, Eric P. Linn and Mary A. Linn, were defendants, as shown by the plat of said subdivision filed in said Court with the report of said Commissioners.

Also an undivided half interest in Tract 3e, described in the amended petition as follows:

That part of the south fraction of the southwest fractional quarter ($\frac{1}{4}$) of Section fifteen (15), in Township thirty-seven (37) North, Range eleven (11), East of

the Third Principal Meridian, bounded and described as follows:

Beginning at the point of intersection of the west line of said southwest fractional quarter ($\frac{1}{4}$) with the boundary line between the Counties of DuPage and Cook, State of Illinois; thence easterly along said boundary line to its intersection with the northwesterly reserve line of the Illinois and Michigan Canal; thence northeasterly along said reserve line to its intersection with the east edge of the embankment called the "Bracken Bank;" thence southwesterly to the southeast corner of lot six (6) of the subdivision made by the Circuit Court Commissioners in the certain cause lately pending in the Circuit Court of DuPage County, Illinois, wherein Rudolph Nunnemacher was complainant and John A. Lomax, Maria Lomax, Gustave A. Bodenschatz, Mary Bodenschatz, Alexander E. Guild, Jr., William E. Witt, P. A. Witt, Eric P. Linn and Mary Linn, were defendants as shown by the plat of said subdivision filed in said Court with the report of said Commissioners; thence westerly along said south line of said lot six (6) to the point of intersection of said south line of said lot six (6) with the west line of said southwest fractional quarter ($\frac{1}{4}$); thence south along said west line of said southwest fractional quarter ($\frac{1}{4}$) to the place of beginning.

Also an undivided half interest in Tract 3f described in the amended petition as follows:

That part of the south fraction of the southwest fractional quarter ($\frac{1}{4}$) of Section fifteen (15), in Township thirty-seven (37) North, Range eleven (11), East of the Third Principal Meridian, bounded and described as follows:

Beginning at the southeast corner of lot six (6) of the subdivision made by the Circuit Court Commissioners in the certain cause lately pending in the Circuit Court of DuPage County, State of Illinois, wherein Rudolph Nunnemacher was complainant and John A. Lomax, Maria Lomax, Gustave A. Bodenschatz, Mary Bodenschatz, Alexander E. Guild, Jr., William E. Witt, P. A. Witt, Eric P. Linn and Mary Linn, were defendants as shown by the plat of said subdivision filed in said Court with the report of said Commissioners; thence northeasterly to the point of intersection of the northwesterly reserve line of the Illinois and Michigan Canal with the east edge of the embankment called the "Bracken Bank;" thence northerly along the eastern edge of said "Bracken Bank" four hundred

and forty-two and twenty one-hundredths feet, more or less, to meet the north line of lot five (5) of said subdivision extended; thence westerly along said line as extended to the northeast corner of said lot five (5); thence southerly four hundred and forty-two and twenty one-hundredths feet, more or less, on the east lines of said lots five (5) and six (6) to the place of beginning.

All of the aforesaid tracts of land being situated in the County of DuPage and State of Illinois."

INVITATION TO ATTEND CLEVELAND "DEEP WATERWAYS CONVENTION."

The Clerk presented a communication from Frank A. Flower, Secretary of the "International Deep Waterways Association," inviting the Trustees to send delegates to the Deep Waterways Convention at Cleveland, September 23, 1895, and requesting certain pamphlets; and the communication was read.

Mr. Cooley, seconded by Mr. Boldenweck, moved that the communication be ordered printed, the request made therein for pamphlets granted, and further action postponed until the next meeting.

The motion prevailed unanimously, and it was so ordered.

The following is

THE COMMUNICATION:

"THE INTERNATIONAL
DEEP WATERWAYS ASSOCIATION, }
ONALASKA, Wis., Sept. 2, 1895. }

DEAR SIR—I wish to ask, formally, on behalf of our Association, that you provide 100 copies of the pamphlet entitled "Lake Level Effects" for distribution and discussion at the Cleveland Convention.

This entire subject will be under full discussion at the meeting in question, and if you will permit me to do so, I will suggest that your Board should be represented there by some of its members as delegates in their official capacity.

It is probable that the facts there to be brought—I have in my hands now Mr. Wisner's paper on that subject—in reference to lake levels and the effect of the Chicago and other Canals connecting with the Great Lakes, will be of immense benefit to your Board.

Very truly yours,

(Signed) FRANK A. FLOWER,
Secretary.
Trustees Sanitary District of Chicago,
Thomas F. Judge, Clerk."

PRELIMINARY REPORT ON EXERCISES
COMMEMORATING COMPLETION OF
SECTION 10.

The President announced that the exercises commemorating the completion of Section 10 of the Main Channel had been held on Tuesday, September 3, 1895, that the tablet had been placed in the wall of the channel at the Cook-Will County line, at the point where work was inaugurated, September 3, 1892, and that a detailed report of the exercises would be transmitted to the Board at the next meeting.

ADJOURNMENT.

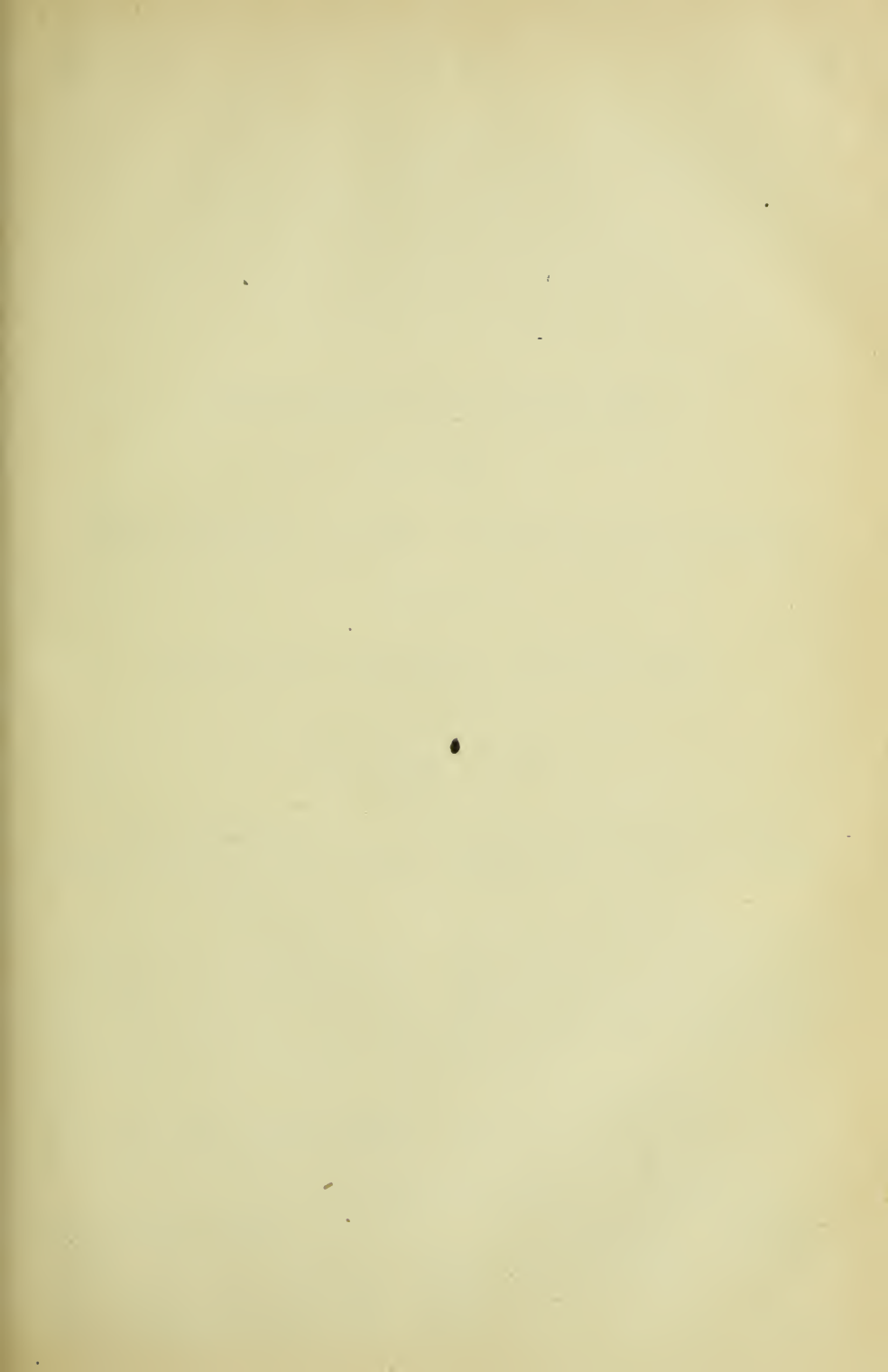
On motion of Mr. Boldenweck, seconded by Mr. Russell, the Board then adjourned.

THOS. F. JUDGE,
Clerk.

September 5,]

—2817—

[1895.





PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

SEPTEMBER 11, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and eighty-first regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, September 11, 1895, at 2 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter Boldenweck, Cooley, Kelly, Russell and Wenter

—six (6), and subsequently Mr. Gilmore, making a total of seven (7) members, were present.

MINUTES.

The minutes of the regular meetings held August 14 and 28, 1895, and of the adjourned sessions of the same regular meetings, held August 21 and September 5, 1895, were approved as printed, on motion of Mr. Kelly, seconded by Mr. Boldenweck.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

Construction Account—

Griffiths & McDermott, (Sec. 1, Aug. 31, 1895).....	\$ 9,797 44
McArthur Brothers, (Sec. 2, Aug. 31, 1895)	18,427 50
Gilman & Company, (Sec. 3, Aug. 31, 1895)	21,311 50
McArthur Brothers, (Sec. 4, Aug. 31, 1895)	18,345 25

CLAUSE "J"	
Total Retained.	Amount re- leased on this Voucher.

\$16,187 85	\$ 14 28
-------------	----------

621 00

		CLAUSE "J"	
		Total Retained.	Amount released on this Voucher.
The Qualey Construction Co., (Sec. 5, Aug. 31, 1895).....	\$ 16,558 50	\$7,236 00	\$ 135 00
Mason, Hoge & Company, (Sec. 6, Aug. 31, 1895).....	20,146 43		945 00
Mason, Hoge & Company, (Sec. 7, Aug. 31, 1895).....	11,271 75		
Mason, Hoge, King & Co., (Sec. 8, Aug. 31, 1895).....	11,340 88		
Halvorson, Richards & Co., (Sec. 9, Aug. 31, 1895).....	12,650 05		
E. D. Smith & Co., (Sec. 10, Aug. 31, 1895)	10,710 00		
Mason, Hoge & Company, (Sec. 11, Aug. 31, 1895).....	14,839 57		
Mason, Hoge & Company, (Sec. 12, Aug. 31, 1895).....	13,724 81		
Mason, Hoge & Company, (Sec. 13, Aug. 31, 1895).....	1,696 19		
Smith & Eastman, (Sec. 14, Aug. 31, 1895)	19,874 75		
Wright, Meysenburg, Sinclair & Carry, (Sec. 15, Aug. 31, 1895).....	11,512 38		
Heldmaier & Neu, (Sec. A, Aug. 31, 1895)	3,361 67	26,297 69	
Heldmaier & Neu, (Sec. B, Aug. 31, 1895)	8,340 33	10,044 00	866 97
Western Dredging & Improvement Co., (Sec. C, Aug. 31, 1895).....	3,310 57		
E. D. Smith & Co., (Sec. D, Aug. 31, 1895)	8,003 95		
Angus & Gindele, (Sec. E, Aug. 31, 1895)	7,961 62	5,022 00	
Weir, McKechney & Co., (Sec. F, Aug. 31, 1895).....	3,355 62		
Gahan & Byrne, (Sec. G, Aug. 31, 1895)..	6,450 60	9,113 16	869 40
Gahan & Byrne, (Sec. H, Aug. 31, 1895)..	11,194 95	6,442 35	
Christie & Lowe, (Sec. I, Aug. 31, 1895)..	8,246 87		325 00
Christie & Lowe, (Sec. K, Aug. 31, 1895)..	10,762 50	1,825 00	450 00
McMahon & Montgomery Co. et al. (Sec. O, Aug. 31, 1895).....	4,000 12	2,297 40	
P. Conley, (Sec. A., Extra work—Removal of hard material in River Diversion—Aug. 31, 1895, <i>Final</i>).....	285 60		
Mason, Hoge & Co., (Sec. 7, Extra work—Dimension stone, rip-rap work, earth core and embankment, Aug. 31, 1895).	200 00		
Total.....		\$287,681 40	

ENGINEERING DEPARTMENT.

Cameron, Amberg & Co., (stationery)...	\$ 36 44
S. D. Childs & Co. (stationery).....	5 82
Ryan & Hart, (stationery).....	18 50
Stromberg, Allen & Co., (stationery)....	3 90
Cargill & Co. (stationery).....	12 30
Post, Jacob & Bruning Company (drafting material).....	22 90
Eugene Dietzgen Company (drafting material).....	17 00
Eugene Dietzgen Company (drafting material).....	21 25

A. H. Abbott & Co., (drafting material).	\$ 4 55
Keuffel & Esser Co., (drafting material)	10 65
Chicago Blue Print Paper Co., (paper)...	4 80
F. Mayer & Co., (blue prints).....	31 32
W. A. Olmsted, (mounting blue prints).	9 80
Fuller & Fuller Co., (photo supplies)....	10 32
Fuller & Fuller Co. (photo supplies)....	2 40
Walmsley, Fuller & Co., (photo supplies)	9 81
Walmsley, Fuller & Co., (photo supplies)	7 75
Sweet, Wallach & Co., (photo supplies).	9 00
Soper Lumber Co., (pine stakes).....	57 50
Soper Lumber Co., (pine stakes).....	4 00
Hibbard, Spencer, Bartlett & Co. (hard- ware).....	5 45
John A. Roebling's Sons Company (wire sash cord).....	3 97
Marshall Field & Co. (signal cloth).....	5 03
Frank S. Amick, Agent, (rent—Corwith, August, 1895).....	15 00
John McCaffery, (rent—Brighton Park, August, 1895).....	25 00
J. M. Abbitt, (rent—Willow Springs, August, 1895).....	20 00
O. W. Moon, (rent—Lockport, August, 1895).....	20 00
Mary Rusk, (gauge reading, Aug., 1895)	10 00
Wm. McGinnis, (gauge reading, Aug., 1895).....	10 00
E. Hastings, (gauge reading, Aug., 1895).....	10 00
Wm. Kirkham, (gauge reading, Aug., 1895).....	10 00
C. B. Brainard, (gauge reading, Aug., 1895).....	8 00
Joseph Carlin, (gauge reading, Aug., 1895).....	2 00
Chicago Towel Supply Co., (towel)...	5 40
Cargill & Co., (carbon paper).....	3 00
Waukesha Hygeia Mineral Springs Com- pany, (water).....	7 50
C. S. Austin, (ice).....	12 00
Robt. W. Hunt & Co., (sieve).....	3 00
Chicago Edison Co., (repairing wires, etc.)	3 79
Orne Electric Construction Company, (repairing wires, etc.).....	1 40
J. M. Abbitt, (sundries).....	14 66
Seelig & Kandler, (repairing tapes).....	22 65
Henry Gebhardt, (vault fittings).....	2 18
Isham Randolph, (traveling).....	119 50
Wm. Trinkaus, (traveling).....	32 57
H. B. Alexander, (traveling).....	19 49
Chas. L. Harrison, (traveling).....	59 75
W. T. Keating, (traveling).....	4 30

 \$ 755 65

CLERICAL DEPARTMENT.

Cameron, Amberg & Co., (stationery)...	\$ 2 72
S. D. Childs & Co., (stationery).....	4 83

Western Bank Note and Engraving Co., (engraved letter heads).....	31 00
Waukesha Hygeia Mineral Springs Co., (water)	3 75
C. S. Austin, (ice).....	3 00
Warner's Towel Supply, (towel).....	2 00
	<hr/>
	\$ 47 30

LAW DEPARTMENT.

Collins, Goodrich, Darrow & Vincent, (legal services).....	\$2,716 85
S. D. Childs & Co., (stationery).....	3 50
P. F. Pettibone & Co., (stationery).....	1 10
Office Specialty Manufacturing Com- pany, (stationery).....	6 00
Western Bank Note and Engraving Com- pany, (engraved letter heads).....	10 50
Barrett's Bindery (binding).....	3 75
Callaghan & Co., (legal reports).....	2 25
Frank Vander Bogart, Clerk Circuit Court, Will County, Ill., (fees).....	5 00
Henry Gebhardt, (abstract case).....	10 90
Chicago Telephone Co., (toll service)...	4 45
Waukesha Hygeia Mineral Springs Com- pany, (water).....	3 75
C. S. Austin, (ice).....	3 00
Warner's Towel Supply, (towel).....	1 50
Geo. E. Dawson, (expense).....	40 95
	<hr/>
	\$ 2,813 50

GENERAL ACCOUNT.

John F. Higgins, (printing proceedings, etc., Aug., 1895).....	157 68
Atchison, Topeka & Santa Fe Railroad Company, (special trains, Section 10, Sept. 3, 1895).....	380 00
Geo. H. Mitchell, (granite tablet, Sec. 10)	400 00
Thos. F. Judge, (sundry expense).....	74 90
C. F. W. Junge, (postage stamps).....	25 00
Edward Williams, (traveling, transpor- tation, etc., expense).....	300 00
	<hr/>
	\$ 1,337 58

POLICE DEPARTMENT.

Daniel E. Tracy, (horse shoeing).....	10 65
John Larney, (horse feed).....	18 23
Wagner Bros., (livery).....	9 00
Edward Williams, (expense).....	73 39
	<hr/>
	\$ 111 27
Grand total.....	<hr/>
	\$292,746 70

Mr. Russell, seconded by Mr. Boldenweck, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Kelly (*except as to vouchers for Mary Rusk, Wm. McGinnis, E. Hastings, Wm. Kirkham, C. B. Brainard, and Joseph Carlin, for gauge reading, on which he voted "No,"*), Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

REPORT ON EXERCISES COMMEMORATING
COMPLETION OF SECTION 10.

The President presented a message, transmitting report of the ceremonies and the addresses delivered at the exercises commemorating the completion of Section 10 of the Main Channel, on Tuesday, September 3, 1895; and the message was read.

Mr. Boldenweck, seconded by Mr. Russell, moved that the message and enclosed report be ordered printed and placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE MESSAGE, WITH REPORT:

“CHICAGO, Sept. 11, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—By consent of all the Trustees of this Board, invitations to participate in the exercises commemorating the completion of Section 10, were extended to the City, County and State Officials, Members of Congress and of the Legislature, men of the leading political parties, presidents of clubs, bankers, members of the Board of Trade and prominent men generally who had

more or less to do with the question of Chicago's drainage from the time when the problem of relief was first agitated. The number of such invitations was necessarily limited, and about fifteen hundred gentlemen, together with some ladies, accepted.

The excursion left over the Santa Fe Road on Tuesday, September 3rd, at 1:30 o'clock P. M., in two trains which carried the invited guests to their destination, the line of Will and Cook Counties on Section 10, where on the same spot three years ago, September 3, 1892, the first shovel of earth was turned and work on the great channel officially inaugurated.

I can state with pleasure and satisfaction that the celebration was marked by the presence of a splendid and appreciative audience and in a general way will long be remembered by those who on that occasion witnessed the placing of the tablet in its position and admired the majestic proportions of the completed channel.

I herewith submit the addresses delivered on that occasion, and recommend that they be incorporated in the proceedings and placed on file.

Respectfully submitted,

(Signed) FRANK WENTER,
(Enclosing report.) *President.”*

ADDRESSES AND CEREMONIES AT SETTING OF TABLET SECTION 10.

The ceremonies and the addresses delivered September 3, 1895, in commemoration of the completion of Section 10 of the Main Drainage Channel, at the point where work on the Channel was inaugurated September 3, 1892.

There were present: President Frank Wenter and Messrs. John J. Altpeter, Wm. Boldenweck, Lyman E. Cooley, Bernard A. Eckhart, Thomas Kelly, Richard Prendergast and William H. Russell, of the Board of Trustees, officers of the Sanitary District of Chicago and invited guests.

President Wenter called the assemblage to order at the Cook-Will County line on the north wall of the Main Channel at 3 o'clock, and spoke as follows:

PRESIDENT WENTER'S ADDRESS:

LADIES AND GENTLEMEN—This date three years ago, on this very spot, amidst witnesses representing the city, state and nation, the first ground was broken. While it does not seem to me that three years have elapsed since that ceremony took place, yet the wonderful change that we face to-day, as compared with three years ago, speaks more forcibly than any words of mine.

The shallow and snail like bed of the Desplaines River has undergone a radical transformation. The river has been crowded to the north and west into a new and

deeper bed. In the center here we behold a most inspiring sight—a majestic and gigantic trough, cut most skillfully through the solid rock—the like of which was never executed or seen before by man.

This section, No. 10, is without doubt the most gigantic on the entire Canal, though it is a mere coincidence that it turned out as such. This firm and the others who have had charge of executing the rock work on the various sections deserve mention for their promptness and ingenuity in handling this material.

The Trustees appreciate the pluck and perseverance which they showed in the beginning of the work in a very marked degree; for failure on the part might have resulted very disastrously to the District. Their inventive genius knew no such word as fail.

On the first letting of the sections, Nos. 1 to 14, inclusive, many experts that were accustomed to do similar work considered not only that the price was low, but that it was a losing venture. But inventive genius found a very extensive and broad field to work in, out of which has developed the construction of machinery most ingenious and original in its make-up and most advantageously adapted to this work, thereby assisting very materially in the possible completion of these rock sections, so that for the last two years the Canal has arrested the attention of inventors and builders as a most instructive field suggestive of new ideas. It has become the Mecca for engineers, not only from our country, but from the world over.

The methods of excavation in vogue on the Canal have very materially lessened the cost of construction, and have set a new basis or standard on work of a similar character as to methods and cost.

It was only recently that the President of the Nicaragua Canal, when on a tour of inspection, expressed it as his opinion that with machinery similar to that in use on our Canal, the cost of constructing the Nicaragua Canal would be reduced fully 25 per cent from the estimated cost.

I will not go into details and recount the energy and watchfulness displayed on the part of the Trustees to further the progress of this mighty work.

As Trustees we have invited you, as representing the various branches of our city, county, state and National Governments, to be present on this occasion, to place this granite block in the wall of the Canal, as signifying a mark of time, commemorating the commencement of construction and the completion of Section 10 in three years.

The few words on this granite block tell of the progress and accomplishments. May this tablet serve as a mark of time in the future prosecution and completion of this mighty enterprise.

With the assistance of my colleagues I now set this tablet in its place, and, with hard and energetic work, in two years from to day, we may see the blue waters of Lake Michigan coursing through this Canal, and first of all solve one of Chicago's greatest problems—to insure pure water and perfect drainage; secondly, to turn over to the City of Chicago a magnificent Canal, twenty-eight miles in length, with twenty-two feet of water, with sixty-five hundred acres of land, and water power greater than that of the Twin Cities of the North—in all a heritage more lasting in fame and value than all her achievements in the past.” (Applause).

SETTING OF THE TABLET.

The tablet, which is of polished granite, 4 by 6 by 1½ feet, weighing about three tons, was then set above the water line, in the north wall of the Main Channel, on the line of Will and Cook Counties. In raised letters on the face of the tablet is the following inscription:

.....

WILL COUNTY	|	COOK COUNTY
-------------	--	-------------

THE SANITARY DISTRICT
OF
CHICAGO

—O—

SECTION 10

GROUND BROKEN
SEPTEMBER 3, 1892

COMPLETED
SEPTEMBER 3, 1895

.....

At the conclusion of the setting of the tablet, Bishop Fallows offered the following

PRAYER;

“I think, my dear friends, the best thing I can say will be to voice your feelings of praise and thanksgiving to Almighty God for what He has done for us.

We thank Thee, Almighty God, our Heavenly Father, for the kind providence which has been over us as a people, and over these, our representatives, in initiating and bringing forward to its present completion this great sanitary work, and we ask for Thy continued benediction to rest upon us and them in the further efforts that may be made until the great end we have in view in its construction shall be successfully attained. And Thine shall be the glory forever. Amen.”

Mr. Wenter then introduced as the orator of the day, the Honorable Samuel P. McConnell, who spoke as follows:

JUDGE MCCONNELL'S ADDRESS;

“LADIES AND GENTLEMEN:—When I accepted the invitation of the Trustees to make an address upon this occasion, I did so without an adequate appreciation of how much could be, and how much ought to be said. I had, like all other citizens, observed, as it were, from a distance, the progress of this work. I knew in a general way that the Board was active, energetic and economical, but not until I looked over this work did I come to have a realizing sense of the immensity of the undertaking and of the majesty of the achievement involved in its completion; not until I had observed the problems which were involved in the making of this channel did I appreciate in any proper way the devoted and patriotic labors of the Trustees and Officers of the Sanitary District. (Applause).

When I stand in the presence of the work already done and contemplate all that was required of labor, devotion, enterprise and skill, I am rather appalled than made fluent. No matter how long I talk I cannot say enough in praise of the projectors of

this enterprise or of the men who have carried it forward. I think we have here a demonstration that the people know how to govern themselves. They realized that they had a great city which had grown even more rapidly than the predictions of its greatest visionary; that its growth had put upon them the solution of a great problem. There lay at the side of the great city, its glory and a source of wealth, the beautiful Lake Michigan. In the earlier days of the city, its blue waters were not contaminated with the small amount of drainage which went into it. Its citizens could rely upon it as a reservoir of pure and unpolluted water. But when a million and a half of people had come to live on the banks of the Chicago River and on the shore of Lake Michigan to make the great metropolis of Chicago, then its people realized that prosperity had brought with it a deadly peril and they saw clearly and quickly, too, that they could not pour refuse and filth into the water which they drank. Naturally the first steps were tentative; tunnels were driven out under the lake for pure water and works were placed in the river to start the drainage down the canal. But these efforts proving a poor and inadequate solution of the problem, they took upon themselves the burden and the cost of the gigantic undertaking the witness of which now lies before us. They were quick to see that even the many millions invested in the cost were a small sum to pay for the results to follow.

Remember, fellow citizens, that it was the people who had the intelligence to study this problem and approve the scheme which indicated its solution.

I do not recall that ever before in the history of the world so small a constituency by their own will have burdened themselves with the cost of so great an enterprise. And remember, too, as marking a great step in the progress of civilization, that the primary purpose of this enterprise, as regarded by the people, was cleanliness and health. (Applause.)

Visions of a great waterway floating commerce from the lakes to the Gulf, of course went along with the more practical desire and purpose to keep the lake clean and send through our city and down the valleys of the Desplaines and Illinois a river of water so large that it should carry our drainage and yet be pure enough to delight those who may live upon its banks.

The people after adopting this great scheme showed their wisdom again by the kind of men they chose to entrust with the work. They chose more wisely than they knew, for certain it is that no public enterprise of the dimensions and importance of this has ever been carried on so energetically and economically. Three years ago the first shovelful of earth was taken from the proposed Channel, a few feet from where we are now standing, and in the place where the tablet commemorating that circumstance has been placed.

I think as we stand here and reflect what the problem was to begin with, what the work has been and is, as we see it now before us, we can more adequately realize how successful a financial enterprise this has been. It was a great problem, full of great difficulties. Lake Michigan was finding its natural outlet through the chain of lakes, over the falls of Niagara, through the St. Lawrence River, and thence to the ocean. To accomplish what was desired here was to take from the lake enough of its fresh water to make a pure river though carrying all the drainage of a great city through an artificial channel in another direction, through the Desplaines, the Illinois and the Mississippi, to the Gulf.

It was not enough to merely excavate this Channel through rock and earth over the twenty-eight miles, where all the Channel was artificial, but there were other

problems to be considered; it must not be made too narrow or the current in it too rapid for commerce, for side by side with the sanitary purposes the commercial possibilities had to be regarded and provided for. The Desplaines River had always worried us—a purling stream in the summer, in which the fish could find scarcely enough water in which to live, it often in the fall or spring became a great river, and, rising out of its banks, flowed over the summit into the Chicago, washing not only black floods, but all the refuse of the City of Chicago into our lake and into our drinking water. These floods had to be provided for and trained in a direction not to interfere with the natural river or ever get into our lake again.

The old river, as it now flows through the city, must be widened and deepened. The Desplaines and the Illinois must also be deepened and straightened and works located to control the waters of the new river in flood time. These were great problems, but already solved by the engineers and in the course of practical solution under the direction of the Trustees.

When I reflect upon the main problem and all the minor problems, and contemplate the work already done, and am told that the entire expense will not exceed twenty-eight million of dollars, I feel that I cannot congratulate myself and all the citizens of Chicago too much upon the faithfulness and economy of the Trustees into whose hands we gave this work. I think it a special and important source of congratulation that the Trustees, although seeing visions of what might be, yet kept in mind the primary purpose of this undertaking and the financial resources of the people. There are still other reasons for congratulation.

I understand that there has not been a strike initiated on the entire line of this work at any time; that the laborers have been paid at the rate of wages prevailing before the panic; that no laborer has gone unpaid, and that politics has never, with its system of spoils, invaded or burdened the business methods of the Board, but that merit has determined both the employment and retention of the employees.

All these matters go to make a record of which the Trustees and the people, who put them in office, may be proud.

I think, perhaps, in view of all these considerations, it will be deemed pardonable in me, as a member of the Democratic party, to congratulate myself, with some pleasure, that the majority of this Board has been Democratic. (Applause). But when I do that I do so without any intention whatever of reflecting upon the very valuable labors which have all the time been contributed by the Republican members of the Board. (Applause).

When completed there will be twenty-eight miles of canal, exclusive of the twelve miles of the Chicago and the Desplaines, to be deepened and widened.

In other words, the entire length of the Channel which will be involved and treated in the solution of the problem of drainage and pure water for Chicago, is about forty miles. These forty miles may be utilized for a ship channel whenever the National Congress may awaken to the grandeur and importance of the project of making a waterway for commerce between the lakes and the Gulf and appropriate the money necessary for the enlargement of the Illinois River. Chicago has done more than its share in the interests of commerce by making ready a channel which includes more than two-thirds of the work and cost necessary to make a ship carrying river from Lake Michigan to the Mississippi. The present Canal, of which now 70 per cent. is completed, has a channel larger in its dimensions than that of the Suez, the Manchester, the Baltic and North Sea, or any other canal ever made by man. (Applause).

Gentlemen, let me say in conclusion that I feel that I have only in a very inadequate way expressed the enthusiasm and the satisfaction which I feel when I stand here in observation of this completed section of the Drainage Channel. I think of the beautiful and prosperous city which shall now so surely in the future find itself not only facing the blue and unpolluted waters of Lake Michigan, but line the river which shall gently flow through it, carrying in its mass of waters the drainage of a city even four times as great as now so easily that it shall not be noticed even by the fish which shall swim in it. (Applause). When I contemplate all this I feel that no one can say enough in praise of the projectors and the supervisors of this work. No monument so enduring could be erected to celebrate the enterprise, the courage and the wisdom of the citizens of this commonwealth, for when monuments shall have crumbled into dust this river made by men shall continue to conduct the pure water of the lake into the valley of the Mississippi, making glad the millions who shall contentedly line its banks and bless it as a source of health and power." (Applause).

At 4 o'clock the proceedings were concluded and the assemblage returned to the city.

SETTLEMENT OF PRICE FOR ROCK EXCAVATED ON SECTION D.

The Clerk presented a report from the Chief Engineer, with reference to the settlement of a price for excavation of rock found on Section D of the Main Channel, for which E. D. Smith & Co. are contractors, and recommending that the same be adjusted; and the report was read.

Mr. Cooley, seconded by Mr. Kelly, moved that the report be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the report was ordered printed and so referred.

The following is

THE REPORT:

"CHICAGO, Sept. 11, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I am in receipt of a letter from Messrs. E. D. Smith & Co., Contractors for Section D, calling attention to the fact that there is no price fixed in their contract for excavating rock on that section and asking that an adjustment of this matter be made at an early date if it is the wish of the Board that they should excavate the rock found.

From the evidence before them they think the volume of solid rock will range between 40,000 to 60,000 cubic yards. In the revised estimates for this section, returned January 1st last, 137,600 yards

of solid rock were reported for this section, the estimates being based upon the best indications to be had at that time. In making up the estimates I used \$1.00 per cubic yard as the price to be paid.

It is desirable that some conclusion should be reached in this matter as E. D. Smith & Co. now have their rock plant from Section 10 free and could begin upon this excavation at once if the price was adjusted.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

MONTHLY REPORT FROM LAW DEPARTMENT.

The Clerk presented a report from the Law Department for the month of August, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, Sept. 11, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I submit herewith the monthly report for August, 1895.

The total amount paid out by this Department during the month is as follows:

SALARIES.

Attorneys.....	\$1,366 67
Office force.....	255 00
	<hr/> \$1,621 67

GENERAL EXPENSES.

Court costs.	\$ 25 00
Right of way.....	425 00
Expense account...	28 80
Printing and stationery	23 00
	<hr/>
	\$ 501 80
Total.....	<hr/>
	\$2,123 47

In the matter of the suit of the Sanitary District vs. Carl Moll and John A. Lomax, in the Circuit Court of Will County, the defendant, John A. Lomax, has abandoned his appeal and has withdrawn from the Joliet National Bank the amount awarded him by the verdict and the order of judgment entered in said cause. We have also reached an agreement with said Lomax for his interest in the remainder of the lands on Sag Island, being that portion of the Island lying west of the Bracken Bank.

This leaves undetermined in DuPage County only the undivided one-half of about forty-two acres of land.

An agreement was finally executed between the District and the Elgin, Joliet and Eastern Railway Company, for the acquirement from it of a small tract of land and of the easement of the right to flow water over a portion of its right of way.

Also an agreement between the District and the Pittsburg, Cincinnati, Chicago and St. Louis Railway Company for the cutting of the Main Channel across its right of way.

An opinion has been prepared in regard to the power of the District legally to issue warrants in anticipation of the tax levy of 1895, accompanied by a form of warrant which will enable the District to pay interest on the warrants issued in the manner pointed out in the opinion.

Some time has been given by my assistants to contesting the attempt to incorporate a village of Sag Bridge. The matter is not yet concluded.

The trial of the suit for the remaining interest in the Sag Island lands, the matter of the issue of warrants, the assignment of the Heidenreich Co., and routine work will occupy the attention of this Department during the coming month.

Respectfully submitted,

(Signed) GEO. E. DAWSON,

Attorney."

MONTHLY REPORT FROM TREASURY DEPARTMENT.

The Clerk presented a report from the Treasury Department for the month of August, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT :

"Balance on hand at date of last report.....	\$1,805,407.92
Received from County Treasurer, Sanitary District Tax Account. \$200,000.00	
Received from National Bank of Illinois, interest for August.	552.54
Received from Globe National Bank, interest for August.....	617.67
Received from Metropolitan National Bank, interest for August....	572.17
Received from American Trust and Savings Bank, interest for August.....	35.66
Received from Chicago National Bank, interest for August.....	564.04
Received from Ft. Dearborn National Bank, interest for August..	560.77
	<hr/>
Total cash received for month.....	\$202,902.85
	<hr/>
Total cash disbursed during month as per annexed schedules, viz:	\$2,008,310.77
Clerical Department....	\$ 900.42
Treasury Department..	166.67
Engineering Department.	17,163.23
Engineering—Construction—Department.....	633,648.35
Law Department.....	2,157.47
Police Department.....	4,035.11
General Account.....	4,135.74
	<hr/>
	\$662,206.99

Balance this date, in banks as per schedule endorsed hereon	\$1,346,103.78
--	----------------

(Signed) MELVILLE E. STONE,
Treasurer.

CHICAGO, August 31, 1895."

SCHEDULE :

National Bank of Illinois.....	\$301,962.61
Chicago National Bank.....	300,638.08
Fort Dearborn National Bank.....	301,122.08
Metropolitan National Bank.....	303,859.95
American Trust and Savings Bank.	21,003.79
Globe National Bank.....	117,517.27
	<hr/>
Total.	\$1,346,103.78

APPOINTMENT OF DELEGATES TO "CLEVELAND DEEP WATERWAYS CONVENTION."

Under the head of "Unfinished Business," the communication from Frank A. Flower, Secretary of the "International Deep Waterways Association," presented and ordered printed at the meeting held September 5, 1895 (page 2816 of the Proceedings), was then taken up.

In connection with the communication, and as requested therein, Mr. Kelly presented a resolution providing for the appointment of delegates to the Deep Waterways Convention to be held at Cleveland, Ohio, September 24, 25 and 26, 1895; and the resolution was read.

Mr. Kelly, seconded by Mr. Russell, moved the adoption of the resolution.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Gilmore, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the resolution adopted, and delegates appointed as provided therein.

The following is

THE RESOLUTION:

"*Resolved*, That the President of the Board of Trustees, the Chairmen respectively of the Committee on Federal Relations and Engineering, the Attorney, Chief Engineer and Assistant Chief Engineer attend the Deep Waterways Convention to be held at Cleveland, Ohio, September 24, 25, and 26, 1895, as representatives of the Sanitary District of Chicago."

REPORT ON AGREEMENTS WITH MCARTHUR BROTHERS FOR BUILDING OF CEMENT MASONRY WALLS ON SECTIONS 2 AND 4.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, transmitting agreements, in duplicate, with McArthur Brothers, contractors for Sections 2 and 4, for the building of cement masonry, in place of dry rubble walls, on said sections, and also report of the Chief Engineer on the quantity of rock still unexcavated on said sections; returning for filing the report of the Chief Engineer, with enclosure, with reference to the same matter, presented and referred to that Committee at the meeting held September 5, 1895 (page 2813 of the Proceedings), and recommending that the Presi-

dent and Clerk be authorized and directed to execute the accompanying agreements, on behalf of the District, as provided in the report; and the report, with accompanying agreements, and report of the Chief Engineer, was read.

Mr. Cooley, seconded by Mr. Boldenweck, moved that the report be adopted, with accompanying form of agreement and report of the Chief Engineer be ordered printed, and, with all enclosures, placed on file, the recommendation made in the report concurred in, and the President and Clerk authorized and directed to execute the accompanying agreements, on behalf of the District, as provided in the report.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Gilmore, Kelly, Russell and Wenter—seven (7). Nays none.

Upon which result the President declared the motion carried, the report adopted, with accompanying form of agreement and report of the Chief Engineer, ordered printed, and, with all enclosures, placed on file, the recommendation made in the report concurred in, and the President and Clerk authorized and directed to execute the accompanying agreements, on behalf of the District, as provided in the report.

The following is

THE REPORT, WITH FORM OF AGREEMENTS AND REPORT:

"CHICAGO, Sept. 11, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The Joint Committee on Engineering and Finance, to whom was referred the communication of the Chief Engineer, stating that McArthur Brothers had accepted the proposition directed by you to be made to them of \$3.50 per cubic yard for retaining walls on Sections two (2) and four (4), have examined the form of agreement prepared by the Attorney and Engineer pursuant to your direction and approve of same.

We transmit copies of said agreement in duplicate for each section and recommend that the President and Clerk be directed to execute said agreements on the part of the District, after same shall have been executed by McArthur Brothers.

We return herewith for filing the communication of the Chief Engineer together with the acceptance of McArthur Brothers, and also a letter from the Chief

Engineer showing the volume of rock yet to be excavated on Sections 2 and 4.

Respectfully submitted,

(Signed) L. E. COOLEY,
Chairman.

W. H. RUSSELL,

WM. BOLDENWECK,

THOMAS KELLY,

JOHN J. ALTPETER,

Joint Committee on Engineering and Finance."

(Transmitting report and two agreements in duplicate.)

(REPORT:)

"CHICAGO, Sept. 11, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I find, on comparing the amounts of stone already excavated from Sections 2 and 4 with the revised estimates rendered Jan. 1st of this year, the following state of facts:

	<i>Cu. Yds.</i>
On Section 2 the total quantities returned are.....	472,624
Excavated up to the 26th of August.....	267,700
Leaving.....	204,924
of stone in place to build 37,668 yards of retaining wall.	
On Section 4 the revised estimates give.....	341,020
excavated up to August 26th	148,400
Leaving.....	192,620

in place to build 48,564 yards of retaining wall, so that we would have a little over four times as much stone in place on Section 2 as is required for the work, and a little over three times as much stone in place on Section 4 as is required for the work.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

(THE FORM OF AGREEMENT:)

Sections 2 and 4.

"*This Agreement, Made this day of September, A. D. 1895, by and between the Sanitary District of Chicago,*

party of the first part, and Archibald McArthur and Arthur F. McArthur, co-partners, doing business under the firm name and style of McArthur Brothers, party of the second part, witnesseth, that,

WHEREAS, The Sanitary District of Chicago, on the fourteenth (14th) day of July, A. D. 1892, entered into a contract with James McArthur, Archibald McArthur and Arthur F. McArthur, doing business under the firm name and style of McArthur Brothers, for the complete excavation and entire removal of earth, rock, glacial drift and other material from that portion of the first party's Main Drainage Channel known as Section . . . , together with the building of all collateral works which by the terms of said contract are included in same, which said contract among other things provides for the building of a large amount of dry rubble wall, and which said contract was, on the first (1st) day of November, A. D. 1893, amended and modified by a supplemental agreement between the Sanitary District of Chicago and said Archibald McArthur and Arthur F. McArthur, co-partners, doing business under the firm name and style of McArthur Brothers; and,

WHEREAS, First party, in view of the greater solidity and permanence of the structure, has deemed it desirable to substitute for dry rubble walls, walls laid in cement so far as possible, throughout its several contract sections;

Now, therefore, In consideration of the promises and of the reciprocal promises herein made, the parties hereto agree as follows:

Second party agrees to construct from rock taken from said Section a random rubble wall laid in cement in lieu of the dry rubble wall specified in said contract, under the direction of the Chief Engineer of first party and in accordance with the following specifications:

The preparations of the foundations of said cement wall shall conform to the requirements stipulated in said contract for dry rubble walls; sand to be coarse, clean and sharp, free from loam and pebbles.

Cement—The best American Hydraulic cement shall be used, brand and quality to be subject to approval by the Chief Engineer, who shall from time to time cause such tests to be made as may seem to him proper for determining the quality of the cement which is shipped for use in the work. The development of

tensile strength shall be 100 pounds per square inch, after having set seven days. Second party shall keep on hand a supply of cement equal to the average consumption in the work during a period of ten days, and it shall be protected against rain or dampness, and so stored as to make the procuring of samples for testing easy. All lumpy, dirty or damaged cement shall be rejected; also damaged or short-weight packages.

Mortar—The mixture shall be of sand and cement in equal parts. The sand and cement shall be thoroughly incorporated with each other before water is added. All mortar used shall be freshly mixed in clean boxes. No hard or partially set mortar shall be used. Water for mixing shall be clean. In laying the wall care shall be taken to secure bond by proper use of headers and stretchers, so far as the stone available for the work will admit, but the wall shall be so thoroughly slushed with cement mortar as to insure the filling of all interstices, and the development of a monolithic mass, so soon as the mortar shall have set. Stone used shall be sound and clean.

The wall shall be pointed with the specified mortar throughout before acceptance; all joints shall be raked out to a depth equal to three times their width to receive pointing. Work on cement masonry walls to be begun after the period of freezing in the spring and to be suspended before freezing begins in the fall.

The walls shall conform to the dimensions specified in said contract and the faces of the walls shall conform to the latter there specified, the stones being generally bedded in planes approximately perpendicular to the faces.

Weeping holes shall be left in the walls every fifty feet at an elevation about two feet below datum. These holes shall not exceed thirty-six (36) square inches of cross section.

For said wall laid in cement as herein specified, second party shall receive three and 50-100 (\$3.50) dollars per cubic yard, measured in the wall.

It is further agreed that the time for the completion of the work on said Contract Section . . . , as fixed in Section G of said original contract, including the construction of the wall herein provided for, is hereby extended to November 1st, 1896.

In witness whereof, The Sanitary District of Chicago has caused this agreement to be signed by its President and

attested by its Clerk, and its corporate seal to be hereto affixed, and the said party of the second part have hereunto set their hands and seals the day and year first above mentioned." etc., etc.

ORDER FOR PAYMENT OF LABORERS OF
THE HEIDENREICH COMPANY ON
SECTIONS L AND M.

Mr. Altpeter presented an order authorizing and directing the Clerk to retain from moneys due on estimates to The Heidenreich Company, contractors for Sections L and M, certain sums, as set forth in the order, for the payment of the laborers and employes of said contractors, for work performed on said sections from August 16 to September 4, 1895; and to pay the balance of said moneys to the assignee of said Company, as provided in the order; and the order was read.

Mr. Altpeter, seconded by Mr. Boldenweck, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Gilmore, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the order adopted, and the Clerk authorized and directed to retain and pay certain sums from moneys due the Heidenreich Company, as provided in the order.

The following is

THE ORDER:

"WHEREAS, On the 4th day of September, A. D. 1895, The Heidenreich Company, Contractors for Sections L and M of the Main Drainage Channel, made an assignment for the benefit of creditors to Charles E. Schlytern, and at the time of such assignment there were due to laborers and employes of said, The Heidenreich Company, including said September 4th, wages for twenty days aggregating for said Section L the sum of four thousand eight hundred and twenty seven and sixty one-hundredths (\$4,827.60) dollars, and for said Section M, the sum of twelve hundred and six and ninety-one one-hundredths (\$1,206.91) dollars; and

WHEREAS, Under Section M of the contracts for said respective Contract Sections L and M, it is agreed that in case of the non-payment by said contractor of the laborers employed in said work, the Sanitary District may itself pay the respective amounts due and owing to said laborers out of any moneys

due or to become due said contractor; now, therefore, be it

Ordered, That the Clerk be and he is hereby authorized and directed to retain from the estimate returned by the Chief Engineer of the amount due said contractor for work on said Section L for the two weeks ending August 25th, 1895, the sum of four thousand eight hundred and twenty-seven and sixty one-hundredths (\$4,827.60) dollars and draw a warrant upon the Treasurer therefor payable to his own order and therewith pay the laborers on said section the respective amounts due them from August 16th to September 4th, 1895, both inclusive, taking receipts therefor, and that he retain from the estimate returned by the Chief Engineer of the amount due said contractor for work on said Section M for the two weeks ending August 25, 1895, the sum of twelve hundred and six and ninety-one one-hundredths (\$1,206.91) dollars, and draw a warrant upon the Treasurer therefor payable to his own order and therewith pay the laborers on said section the respective amounts due them from August 16th to September 4th, 1895, both inclusive, taking their receipts therefor.

Ordered further, That the Clerk draw warrants upon the Treasurer for the remaining sums due upon said estimates for said respective sections after the application of the respective sums hereinbefore ordered, payable to the order of The Heidenreich Company, and deliver same to Charles E. Schlytern, Assignee, upon his receipt and the receipts of E. Lee Heidenreich and Harold A. Boedker therefor."

APPROVAL OF VOUCHERS FOR THE HEIDENREICH COMPANY ON SECTIONS L AND M.

By unanimous consent, the Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

Construction Account—

The Heidenreich Co., (Sec. L, Aug. 31, 1895).....	\$7,096 68
The Heidenreich Co., (Sec. M, Aug. 31, 1895).....	2,202 55
Total.....	<u>\$9,299 23</u>

Mr. Kelly, seconded by Mr. Altpeter, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Gilmore, Kelly, Russell and Wenter—seven (7). Nays none.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

ADJOURNMENT TO SPECIAL TIME.

Mr. Kelly, seconded by Mr. Boldenweck, moved that when the Board adjourn, it do adjourn to meet Wednesday, September 18, 1895, at 1:30 o'clock P. M.

The motion prevailed unanimously, and it was so ordered.

ADJOURNMENT.

On motion of Mr. Kelly, seconded by Mr. Boldenweck, the Board then adjourned to meet Wednesday, September 18, 1895, at 1:30 o'clock P. M., pursuant to motion.

THOS. F. JUDGE,
Clerk.

September 11,]

—2833

[1895.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

SEPTEMBER 18, 1895.

OFFICIAL RECORD.

*Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

ADJOURNED MEETING.

The adjourned session of the two hundred and eighty first regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, September 18, 1895, at 1:30 o'clock P. M., pursuant to motion.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7) members, were present.

VOUCHERS.

The Clerk presented the following voucher:

ENGINEERING DEPARTMENT.

Construction Account—

Isham Randolph (Extra work—
Moving Western Stone Company bridge from Section 9—
Sept. 10, 1895—*Final*).....\$ 615 14

Mr. Boldenweck, seconded by Mr. Cooley, moved that the voucher, as read and shown above, be approved and ordered paid.

On roll call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried and the voucher, as read and shown above, approved and ordered paid.

MONTHLY REPORT FROM CLERICAL DEPARTMENT.

The Clerk presented a report from the Clerical Department for the month of August, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, September 18, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have the honor to herewith report that the total amount expended on account of and charged to the Clerical Department during the month of August, 1895, was \$900.42, divided as follows:

Salaries	\$891 67
General expenses.....	8 75
Total.....	<u>\$900 42</u>

There are no outstanding liabilities, and the expenses for the present month will, from present indications, be about \$950.

The total amount expended and charged to the General Account during the month of August, 1895, was \$4,115.34, divided as follows:

Salaries.....	\$2,829 83
Printing.....	306 23
Advertising.....	11 20
District telephone line.....	764 17
General expenses.....	203 91
Total.....	<u>\$4,115 34</u>

There are no outstanding liabilities against the General Account, and the expenses for the present month will be about \$5,000.

During the month of August, 1895, there were warrants authorized and drawn against the various accounts for \$674,026.79, as follows:

Engineering Department.....	\$ 17,027 26
Clerical Department.....	900 42
Law Department.....	2,123 47
Treasury Department.....	166 67
General Account.....	4,115 34
Engineering Department (Construction Account).....	645,767 00

Police Department.....	3,926 63
Total.....	<u>\$674,026 79</u>

Respectfully submitted,

(Signed) THOS. F. JUDGE,

Clerk.”

CHANGING OF SANTA FE AND POSTAL TELEGRAPH WIRES AT LEMONT CROSSING.

The Clerk presented a report from the Chief Engineer, with reference to the changing of the Santa Fe and Postal telegraph wires at the Lemont crossing, and asking the approval of his action in ordering said changes and the authorization of the payment of the bill for said work; and the report was read.

Mr. Boldenweck, seconded by Mr. Cooley, moved that the report be ordered printed and placed on file, the action of the Chief Engineer approved and the payment of the bill for said work, as set forth therein, authorized.

Mr. Eckhart, seconded by Mr. Altpeter, moved as a substitute, that the report be ordered printed and referred to the Joint Committee on Finance and Engineering.

On roll-call, on the substitute, the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly and Russell—six (6). Excused and not voting—Mr. Wenter—one (1). Nays—None.

Upon which result the President declared the substitute carried, and the report ordered printed and so referred.

The following is

THE REPORT:

“CHICAGO, Sept. 18, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In arranging for the transfer of the cableways at Lemont from the westerly to the easterly side of the Santa Fe Railroad, it was also necessary to care for the telegraph wires of the Postal Telegraph and Santa Fe Companies (eighteen or nineteen wires). I conferred with the representative of the Postal Company as to the best method of doing this, and as a result decided to put these wires in a cable and carry them across our right of way and Channel, as the wires would then be in shape for shifting at any time to meet the changes which must be made at that place to accommodate the rearrangement of tracks, etc. The Telegraph Company agreed to

do all of the labor if we would furnish the material.

Having satisfied myself that this was the best and cheapest way of caring for these wires, I ordered the work done, and ask you to authorize the payment of the bill, \$487.58. I would say further that this was not done until I had advised with our Attorney and become satisfied that it was an expense for which this District was liable.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

PAYMENT FOR STONE TAKEN FROM RIGHT
OF WAY AT LOCKPORT.

The Clerk presented a report from the Attorney, transmitting check (\$10) being amount received in settlement for stone taken, without authority, from right of way at Lockport, as set forth in the report; and the report was read.

Mr. Cooley, seconded by Mr. Kelly, moved that the report be ordered printed and placed on file, and the Clerk directed to deposit the accompanying check with the Treasurer of the District, to the credit of the District and the General Account thereof.

The motion prevailed unanimously, and it was so ordered.

The following is

THE ORDER:

"CHICAGO, September 18, 1895. ☐

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN — I transmith herewith check for ten (\$10) dollars, amount collected by Mr. Nadelhoffer with my approval in settlement for stone taken from our right of way at Lockport without authority.

Yours respectfully,

(Signed) GEO. E. DAWSON,
Attorney."

(Accompanied by check—\$10.)

PAYMENT FOR "MOLL" LAND.

Mr. Eckhart, Chairman, for the Joint Committee on Finance and Engineering, presented an order authorizing and directing the Clerk to pay Carl Moll, Trustee for the National Bank of Illinois, on the voucher of the Attorney, a certain sum, as set forth in the order, for certain right of way lands in Du Page

County, in full of verdict for said lands, as provided in the order; and the order was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved the adoption of the order.

On roll call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the order adopted, and the Clerk authorized and directed to pay Carl Moll, Trustee for the National Bank of Illinois, on the voucher of the Attorney, a certain sum for certain right of way lands in Du Page County, in full of verdict for said lands, as set forth in the order.

The following is

THE ORDER:

"Ordered, That upon the entry of the verdict in the Circuit Court of Will County, Illinois, against the Sanitary District of Chicago, for the sum of five thousand two hundred and fifty (\$5,250) dollars, being the compensation to be paid to Carl Moll, Trustee for the National Bank of Illinois, for the lands hereinafter described, which are to be taken for the uses and purposes of the District, and further upon the delivery of duly executed quit claim deeds of the interests of the parties defendant in and to said premises, the Clerk of the District be and he is hereby authorized and directed to pay on the voucher of the attorney to Carl Moll, Trustee for the National Bank of Illinois, the sum of five thousand two hundred and fifty (\$5,250) dollars, said sum to be in full satisfaction and payment for all of the following described real estate, to-wit: The undivided half interest in Tract 3b, described in the amended petition as follows:

That part of the south fraction of the southwest fractional quarter ($\frac{1}{4}$) of Section fifteen (15) in Township thirty-seven (37) north, Range eleven (11) east of the Third Principal Meridian, bounded and described as follows:

Beginning at the point of intersection of the north line of Lot five (5) of the sub-division made by the Circuit Court Commissioners in the certain cause lately pending in the Circuit Court of Du Page County, Illinois, wherein Rudolph Nunemacher was complainant and John A. Lomax, Maria Lomax, Gustave A. Bodenschatz, Mary Bodenschatz, Alexander E. Guild, Jr., William E. Witt, P. A. Witt, Eric P. Linn and Mary Linn

were defendants, as shown by the plat of said sub-division filed in said Court, with the report of said Commissioners, with the west line of the southwest fractional quarter ($\frac{1}{4}$); thence north along said west line to the southeasterly margin of the Desplaines River; thence northwesterly at right angles to the general course of said river there to the center thread of the current of said river; thence northeasterly along said thread to its intersection with a line drawn northwesterly from the point of contact of the north line of said southwest fractional quarter ($\frac{1}{4}$) with the southeasterly margin of said Desplaines River and at right angles to the general course of said river there; thence southeasterly along said line to said southeasterly margin; thence east along said north line of said southwest fractional quarter ($\frac{1}{4}$) to the intersection of said line with the boundary line of Lot four (4) of the said subdivision made by the Circuit Court Commissioners as aforesaid; thence southwesterly and southerly down and along the boundary line of said Lot four (4) to its intersection with the northerly line of Lot five (5) as aforesaid; thence westerly along said northerly line of Lot five (5) to the place of beginning.

Also all of Tract 3d, described in the amended petition as follows:

That part of the south fraction of the southwest fractional quarter ($\frac{1}{4}$) of Section fifteen (15) in Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, bounded and described as follows:

Lot six (6) of the subdivision made by the Circuit Court Commissioners in the certain cause lately pending in the Circuit Court of Du Page County, State of Illinois, wherein Rudolph Nunnemacher was complainant and John A. Lomax, Maria Lomax, Gustave A. Bodenschatz, Mary Bodenschatz, Alexander E. Guild, Jr., William E. Witt, P. A. Witt, Eric P. Linn and Mary Linn were defendants as shown by the plat of said subdivision filed in said court with the report of said Commissioners.

Also an undivided half interest in Tract 3e, described in the amended petition as follows:

That part of the south fraction of the southwest fractional quarter of Section fifteen (15) in Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, bounded and described as follows:

Beginning at the point of intersection

of the west line of the said southwest fractional quarter ($\frac{1}{4}$) with the boundary line between the Counties of Cook and Du Page, State of Illinois; thence easterly along said boundary line to its intersection with the northwesterly reserve line of the Illinois and Michigan Canal; thence northeasterly along said reserve line to its intersection with the east edge of the embankment called the "Bracken Bank;" thence southwesterly to the southeast corner of Lot six (6) of the subdivision made by the Circuit Court Commissioners in the certain cause lately pending in the Circuit Court of Du Page County, State of Illinois, wherein Rudolph Nunnemacher was complainant and John A. Lomax, Maria Lomax, Gustave A. Bodenschatz, Mary Bodenschatz, Alexander E. Guild, Jr., William E. Witt, P. A. Witt, Eric P. Linn and Mary Linn were defendants as shown by the plat of said subdivision filed in said court with the report of said Commissioners; thence westerly along said south line of said Lot six (6) to the point of intersection of said south line of said Lot six (6) with the west line of the said southwest fractional quarter ($\frac{1}{4}$); thence south along said west line of said southwest fractional quarter ($\frac{1}{4}$) to the place of beginning.

Also an undivided half interest in Tract 3f, described in the amended petition as follows:

That part of the south fraction of the southwest fractional quarter ($\frac{1}{4}$) of Section fifteen (15) in Township thirty-seven (37) North, Range eleven (11) East of the Third Principal Meridian, bounded and described as follows:

Beginning at the southeast corner of Lot six (6) of the subdivision made by the Circuit Court Commissioners in the certain cause lately pending in the Circuit Court of Du Page County, State of Illinois, wherein Rudolph Nunnemacher was complainant and John A. Lomax, Maria Lomax, Gustave A. Bodenschatz, Mary Bodenschatz, Alexander E. Guild, Jr., William E. Witt, P. A. Witt, Eric P. Linn and Mary Linn were defendants as shown by the plat of said subdivision filed in said court with the report of said Commissioners; thence northeasterly to the point of intersection of the northwesterly reserve line of the Illinois and Michigan Canal with the east edge of the embankment called the "Bracken Bank;" thence northerly along the eastern edge of said "Bracken Bank" four hundred and forty-two and twenty one-hundredths feet, more or less, to meet the north line of Lot five (5) of the said

subdivision extended; thence westerly along said line as extended to the north-east corner of said Lot five (5); thence southerly four hundred and forty-two and twenty one-hundredths feet, more or less on the east lines of said Lots five (5) and six (6) to the place of beginning.

All of said real estate being situated in the County of Du Page and State of Illinois."

ADVERTISEMENT, SPECIFICATIONS, BOND
AND PROPOSAL FOR REGULATING
WORKS AT LOCKPORT.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, transmitting form of advertisement, specifications, bond and proposal for the work of constructing the Regulating Works on the Main Channel at Lockport, returning for filing report of the Chief Engineer, presented and referred to that Committee at the meeting held August 23, 1895 (page 2809 of the Proceedings), recommending the adoption of the accompanying advertisement, specifications, etc., and that the President and Clerk be authorized and directed to advertise for bids for said work, as provided in the report; and the report was read.

Mr. Cooley, seconded by Mr. Boldenweck, moved that the report with accompanying form of advertisement, specifications, bond and proposal, be adopted, ordered printed and, with all enclosures, placed on file, the recommendations made in the report concurred in, and the President and Clerk authorized and directed to publish the accompanying advertisement for bids, as provided in the report.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report and accompanying form of advertisement, specifications, bond and proposal adopted, ordered printed, and, with all enclosures, placed on file, the recommendations made in the report concurred in, and the President and Clerk authorized and directed to publish the accompanying advertisement for bids, as provided in the report.

The following is

THE REPORT, WITH ACCOMPANYING ADVERTISEMENT, SPECIFICATIONS, ETC.:

"CHICAGO, September 18, 1895.

To the Honorable the Board of Trustees
of the Sanitary District of Chicago:

GENTLEMEN—We have carefully ex-

amined the plans and specifications for the Regulating Works at Lockport, prepared by the Chief Engineer and referred to us by your Honorable Body at the regular meeting held August 28th, 1895, and approve the same, with the addition of the slight modifications suggested by us.

The form of advertisement, specifications, bond and proposal, as finally determined upon, are herewith submitted, and we recommend their adoption by you, and that the President and Clerk be directed to advertise for proposals for said work.

We return, for filing, the letter of the Chief Engineer of August 28th, 1895.

Respectfully submitted,

(Signed) L. E. COOLEY,
Chairman

B. A. ECKHART,
JOHN J. ALTPETER,
WM. BOLDENWECK,
W. H. RUSSELL,
THOMAS KELLY,

Joint Committee on Engineering and Finance."

(Accompanied by advertisement, specifications, etc.)

The following is

THE ADVERTISEMENT:

"SANITARY DISTRICT OF CHICAGO.

To Contractors.

Sealed Bids addressed to the Board of Trustees of the Sanitary District of Chicago, and indorsed:

"Bid for constructing Regulating Works for the Main Drainage Channel" will be received by the Clerk of said Sanitary District at Room H, Rialto Building, Chicago, Illinois, until 12 M. (standard time) of Wednesday, the 20th day of November, 1895, and will be publicly opened by the said Board of Trustees at the regular meeting held that day, or at a special meeting called for that purpose.

The work for which the said tenders are invited is the furnishing, delivering and erecting in place ready for continuous use the various parts of the Regulating Works described and specified in the detailed specifications furnished by the Chief Engineer.

Said work will consist of the construction of seven sluice gates of timber, including the foundations, masonry and all parts complete, and the construction and erection of bear trap, metal and wood work.

Each bid must be accompanied by a certified check or cash to the amount of \$5,000.00.

All certified checks must be drawn on some responsible bank doing business in the City of Chicago, and be made payable to the order of the Clerk of the Sanitary District of Chicago. Said amount of \$5,000.00 will be held by the Sanitary District until all of said bids have been canvassed and the contract awarded and signed, the return of said check or cash being conditioned upon any bidder to whom the award of said work may be made appearing within ten days after notice of such award being given, with bondsmen, and executing a contract with the Sanitary District for the work so awarded, and giving a bond satisfactory to the said Board of Trustees for the fulfillment of the same, in the amount of \$50,000.00.

All bids must be made upon blank forms furnished by the Sanitary District, and must give the price for each separate class of work or material called for by the specifications.

The bids will be compared on the basis of the aggregate of the lump sum bids, and of the prices per cubic yard for all other work.

No bid will be considered unless the party making it shall furnish evidence satisfactory to the Board of Trustees of his experience and ability in this class of work, and that he can control sufficient capital to enable him successfully to prosecute same in case the contract therefor shall be awarded him.

Bidders are required to state in their bids their individual names and places of residence in full.

Specifications and plans may be seen at the office of the Chief Engineer, Room 522, Rialto Building, Chicago, Illinois.

The said Board of Trustees reserves the right to reject any and all bids.

THE SANITARY DISTRICT OF CHICAGO,

By FRANK WENTER,

President.

ATTEST:

THOMAS F. JUDGE,

Clerk.

CHICAGO, September 18, 1895."

The following are

THE SPECIFICATIONS:

"SANITARY DISTRICT OF CHICAGO.

Contract and Specifications for the Regulating Works for the Main Channel near Lockport, Ills.

THIS AGREEMENT, Made and entered into this.....day of.....A. D. 189..., by and between the Sanitary District of Chicago, of the first part, and..... of..... in..... of the second part.

A—

WITNESSETH: That the said party of the second part has covenanted, contracted and agreed, and by these presents does covenant, contract and agree with the said party of the first part, for the consideration of the payments to be made as provided herein, to the said party of the second part, by the said party of the first part, and under a penalty expressed in a bond bearing even date herewith, at his own proper cost and expense to do all the work, and to furnish all material, tools, explosives, labor and all appliances and appurtenances called for by this agreement, in the manner and under the conditions hereinafter stipulated, that are necessary to the complete doing of the work known and distinguished by the specifications herein contained, and the plans accompanying them, as the construction of the Regulating Works for the Main Channel, together with the doing of all collateral works, which by the terms of this contract are included in the same.

B—

It is further covenanted, contracted and agreed that the work shall be executed under the direction and supervision of the Chief Engineer of the Sanitary District of Chicago, and his properly authorized agents, by whose measurements and calculations the quantities and amounts of the several kinds of work performed under this contract shall be determined, and on whose inspection all work shall be accepted or condemned. The said Chief Engineer and his properly authorized agents shall have full power to reject or condemn all materials furnished or work performed un-

der this contract, which do not fully conform to its spirit and to the terms and conditions herein expressed; and the Chief Engineer shall decide every question which may arise between the parties hereto relative to the execution thereof, and his decision shall be final and binding upon both parties.

C—

Wherever the words "Sanitary District" are used in this contract, they shall be understood to mean the Sanitary District of Chicago, as represented by the Board of Trustees or their duly authorized and accredited agents.

Wherever the words "Chief Engineer" or "Engineer" are used herein, they shall be understood to mean the Chief Engineer of the Sanitary District of Chicago or his properly authorized agents, limited by the particular duties intrusted to them.

Wherever the word "Contractor" is used herein, it shall be understood to mean the person or persons or copartnership or corporation entering into the contract as party of the second part.

The drawings, sheets No. 1 to 10 inclusive, with the dimensions and specifications written on them, shall be a part of this contract.

Specifications for Regulating Works.

The work to be done shall consist of the furnishing, delivering and erecting in place, ready for continuous use, the various parts of the Regulating Works hereinafter described and specified.

Said Regulating Works will consist of the construction of the masonry and metal work complete for seven (7) sluice gates, the excavation and mason work as indicated on plans for eight (8) additional sluice gates, and the construction of a bear trap dam.

Said works shall be located at the west line of the Main Channel of the Sanitary District of Chicago, on the property of the Sanitary District, and between Stations 1510 and 1520, in Section 15 of the Main Channel near Lockport, Will County, Illinois. The exact location in plan is shown and described on Plan 1.

The work shall, for convenience in describing, specifying and receiving bids, be

divided into several general parts as follows:

- I. Sluice gate metal and wood work.
- II. Sluice gate masonry.
- III. Bear trap metal and wood work.

The parts will be described and specified separately.

I. Sluice Gate Metal and Wood Work.

The sluice gate metal and wood work shall consist of the following items:

- (1) Bearing or sill for bottom of gate.
- (2) Metal secured to piers.
- (3) The main gate.
- (4) The auxiliary gate on main gate.
- (5) The anti-friction devices and end bearings of gates.
- (6) The mechanism for raising and lowering the gates.
- (7) The bridges connecting the piers.
- (8) The metal and wood parts of building,

1. The bearing for bottom of gate shall consist of a timber bedded in the masonry floor and a steel bearing rail fastened thereto as shown on Plan No. 5. It shall be anchored to the foundation securely by the method indicated on the plan. The dimensions shall be as shown on the plan. All the metal shall be of wrought iron or mild steel in accordance with the general specifications for these metals hereinafter stated. The holding down bolts shall be twelve in number for each gate sill, each of a length to be determined by the Engineer. Each bolt shall be secured by fox-tail wedges as shown, so as to sustain a pull of 10,000 lbs. longitudinally without developing signs of weakness.

2. The metal secured to the piers shall be of cast iron and mild steel, and shall be arranged and have the dimensions shown on Plans No. 4, 5 and 9. It shall be true to dimensions, and have the style of workmanship shown on the plans. It consists in general of a cast iron footing at base of piers at ends of each gate, slots in which ends of gate move, anchorages to piers, snubbing posts in front of piers as shown, and supports for gate moving mechanism.

3. The main gate shall be constructed of mild steel, and shall have the arrangement of parts and dimensions shown on Plans

No. 2 and 6. When erected, those parts to which the cast steel channels (forming part of the anti-friction devices) are to be secured at the ends of gate shall come in a true plane; and if the Chief Engineer shall so decide, those parts shall be planed so that the cast steel channels shall have a true bearing throughout the adjacent and opposite surfaces.

The parts of the gates shall be erected and fitted at the shops. All field rivet holes shall be punched or drilled for three-quarter ($\frac{3}{4}$ in.) inch rivets, and all parts for field rivets shall be reamed in place after parts are assembled in shape, to take seven-eighths ($\frac{7}{8}$ in.) inch rivets.

4. Auxiliary gates shall be placed on each of the main gates. They shall consist of metal frames bolted to the main gate as shown, on which the auxiliary gates shall move. The auxiliary gates shall be of metal and shall be raised and lowered by a rack and pinion. Each main gate shall be fitted with the auxiliary gates, and each of the latter shall have the arrangement and dimensions shown on Plan No. 10. The gates shall be of mild steel, except as may be otherwise indicated on the plans.

5. The anti-friction devices shall consist of a cast steel channel bolted to ends of each gate, with a wedge tongue of Tobin bronze inserted in it, a wedge bar of mild steel and a roller train. The channel with the wedge tongue and the wedge bar shall have the arrangement and dimensions and style of construction shown on the Plans No. 8 and 9. The roller train shall have the arrangement, dimensions and nature of construction shown on Plans No. 8 and 9.

6. The mechanism for raising and lowering the gates shall consist of the following items, as shown on Plans No. 2, 5 and 7.

(a) A fixed shaft for the piers and abutments to sustain the weight of the gates and reactions of the mechanism.

(b) A spur gear and pocketed wheel at each end of each gate revolving as one piece on the fixed shaft.

(c) A pinion engaging the spur gear.

(d) The pinion shaft extending from pinion to pinion at each gate.

(e) A ratchet wheel mounted at opposite ends of each pinion shaft.

(f) A walking beam and ratchet mounted with each ratchet wheel.

(g) A system of levers and pins mounted on the fixed shaft.

(h) A chain at each end of each gate for raising it and for sustaining counter balance.

(k) A counter balance for each gate.

These shall all have the arrangement, dimensions and nature of construction shown on the Plans. Each gate shall be fitted therewith complete in all details ready for continuous use.

7. The bridges connecting piers shall be of two classes:

(a) The bridges on towers of piers. These bridges shall be continuous from abutment to abutment in all details shown, and shall have the arrangement, dimensions and nature of construction shown on Plans No. 2 and 4.

(b) The wagon bridge on down stream end of piers. This shall have the arrangement, dimensions and nature of construction shown on Plans No. 2 and 4. It shall be continuous from abutment to abutment in all details shown.

8. A building shall be constructed at the south end of the line of sluice gates as indicated on Plan No. 1. This building shall be essentially a continuation of the tower of the south abutment in a line parallel to the line of the Main Channel.

The metal and wood work shall consist of the following items:

(a) A metal stairway having the arrangement, dimensions and nature of construction shown on Plan No. 3.

(b) The southern terminus of the bridge on top of towers, hereinbefore specified.

(c) The lateral bracing of building, the stair supports, holding down bolts and roof, all of which shall have the arrangement, dimensions and nature of construction shown on Plan No. 3.

(d) Doors, window frames and steps of stairway having the general arrangement and dimensions shown on Plan No. 3, which shall have a detailed construction of a nature to be approved by the Chief Engineer.

II. Sluice Gate Masonry.

The sluice gate masonry shall consist of the following general items:

(a) Excavation for foundations.

- (b) Construction of foundations.
- (c) Construction of piers and abutments and floors between them.
- (d) Construction of the housing at the south abutment.

These items are described and specified in detail in the following:

(a) The excavation for foundations shall consist of the excavation, removal and disposition of the rock and other material from the area bounded on the north and south by lines perpendicular to the line AB on west side of the Main Channel at Stations and respectively, on the east by the west side of the Main Channel, and on the west by a line parallel with the straight line AB on Plan No. 1 and 45 feet distant therefrom, all to be in Section 15 of the Main Channel. And further, the area to be excavated shall cover the base of the west end of abutments of north and south sluice gates, and a clear space of two feet outside of said base. The depth of excavation shall be, over the whole area, to a depth of 17.75 feet below Chicago datum as established by the Sanitary District of Chicago, and, in addition, to such further depth at any particular part or parts of the area as may be directed by the Chief Engineer in order to secure suitable base for foundations. The material excavated shall be removed to and disposed upon the property of the Sanitary District west of the Main Channel, and entirely north of the north line of the excavation. No material excavated shall be disposed within a distance of 50 feet from the Main Channel. The sides of the excavation shall be vertical.

(b) The base for foundations having been thus prepared, the foundations shall be constructed thereon, as follows: A mass of Portland cement concrete shall be laid on the base, after it has been thoroughly cleansed, the boundaries of which shall be as follows: The eastern boundary shall be vertical and on a line two (2) feet east of the easterly ends of the piers; the western boundary shall be vertical and two (2) feet west of the westerly end of the piers, except that, at the abutments the boundary shall be two (2) feet outside of the base of the abutments; the north boundary shall be the north end of the excavation; the south boundary shall be two feet south of and outside of the base of the superin-

cumbent abutments or masonry. The top of the foundations shall be level and at an elevation of 17.1 feet below Chicago datum.

(c) The piers and abutments shall be arranged and dimensioned as shown on Plans No. 1, 2, 3 and 4. They shall be erected immediately upon the foundations. The materials of construction shall be dimension stones, granite paving stones, bricks and Portland and natural cement concrete and mortar. Each course of every pier and abutment shall be completed before the construction of the next course is commenced. Where granite paving blocks or bricks are used, one layer of blocks or two layers of bricks with the concrete backing constitute a course. The iron work to be secured to and imbedded in the masonry shall be placed and erected by the contractors by such means and methods as shall meet the approval of the Chief Engineer in order to secure its erection in exact position, and a suitable contact between the masonry and the iron work. The masonry shall be joined to the iron work with joints of Portland cement mortar, of such dimensions as to easily facilitate all joints being filled solid with the mortar. The disposition of the materials of construction shall be as indicated on the plans.

The floors between piers shall be constructed immediately upon the foundations, after the erection of the piers and abutments. The bottom bearing or sill for the gates shall be first placed and erected by the contractor, as follows: The sill shall be put firmly in place, the holes for holding down bolts having been previously made in it. The holes for the masonry of the holding down bolts shall then be drilled to the size indicated on Plan No. 5, and to such depth as the Chief Engineer may direct. This having been done, the bolt rods shall be driven and secured, and cut off to proper depth. The threads on the rods shall then be cut, and the bolts subjected to such test as the Chief Engineer may direct, to determine their strength and resistance to displacement. Any bolts failing shall be replaced by the contractor at his own expense. This having been done, the sill shall be bedded in Portland cement mortar, being brought to a bed by the nuts on the holding-down bolts, before the mortar has set. The contact between the bottom of bearing and the bed

shall be continuous throughout, which result shall be proved by such tests as the Chief Engineer may direct. When bedded the bearing shall be in true and exact position as indicated on the plans. The sill having been bedded, it shall be joined to the piers and abutments by joints completely filled with Portland cement mortar.

The floors shall be constructed next, and shall consist of granite paving blocks set in Portland cement mortar, east and west of the gate sills, terminating at the east and west with dimension stone masonry, as indicated on the plans. Underneath that part of the paved floors east of the gate sills there shall be placed a mass of Portland cement concrete raised to an elevation suitable for the construction of the floors as indicated on the plans.

(d) The housing at the south abutment shall have the arrangement, dimensions and nature of construction, indicated on Plan No. 3. The material of construction shall be brick masonry. All metal and wood work involved in its construction shall be placed and erected by the contractor, under the same specifications as for the metal and wood work involved in piers, abutments and floors.

III. Bear Trap Metal and Wood Work.

The bear trap is to be a dam with a movable crest, made of metal, of the character indicated on the plans, and having the general dimensions indicated on the plans. The nature of the bear trap is made known by examining the Plans 1, 2, 3, 4, 5 and 6 in the order of their numbering.

Bidders must submit detailed designs for the construction of the metal work called for by the plans, such designs to conform to the limitations hereinafter specified. The design shown on the plans is simply intended to indicate the general nature of the construction.

The accepted design must conform to the dimensions indicated on the plans. Dimensions not indicated on the plans are to be determined by the designer.

When the crest of the dam is at elevation six (6) feet above datum, and at the same time sustaining a water level at the same elevation with or without the full pressure of water in upper pool acting on interior of dam, no metal forming a part

of the structure shall have a unit stress exceeding that specified hereafter. When the crest of the dam is at any elevation below six (6) feet above datum, and water is flowing over the crest of the dam at any depth not exceeding five (5) feet at the crest, then no metal shall have a unit stress exceeding that specified hereafter.

When the dam is at its lowest possible position, the weight of the leaves of the dam and their attached parts shall be counterbalanced in the manner shown on the plans, and the strength of all parts shall be such that if counterbalancing be of an extent to counterbalance whole weight of leaves, then no metal in the structure shall have a unit stress exceeding that specified hereafter.

Under any conditions of operating the dam, no metal shall at any time be so disposed that it can have a unit stress exceeding that hereinafter specified.

The dam must be designed so as to be stable under all conditions of operation.

The weight of the up stream leaf of dam shall not exceed 335,000 pounds.

The weight of down stream leaf of dam, including timber facing, shall not exceed 520,000 pounds.

The lower edge of up stream leaf must move on rollers so disposed that the friction on the rollers at the journal shall not exceed 10 per cent of the load carried by them.

The coefficient of friction at the hinges at the edges of down stream leaf shall not exceed 15 per cent.

The leaves of dam shall have no other frictional contact with any other parts of structure, except at the horizontal edges.

The design shall be such as to essentially prevent the passage of air or water between the interior and exterior of the dam, or in a degree equal to that of the design shown on the plans.

The length of the leaves shall be such that under conditions of greatest length due to expansion, there shall be no actual contact between the leaves and the piers or abutments.

The dam is to be operated by admitting and exhausting the water to and from the under side or interior of the dam, but the arrangement for accomplishing this operation forms no part of the work to

be done under this specification. Nor is it intended that the design shall include the foundations or abutments, all of which shall be of masonry, any further than is necessary to accomplish the stability of the dam under its various conditions of loading. The designer may take it for granted that all omitted arrangements for operating and sustaining the dam will be provided by the Sanitary District.

The foundation of the dam will be on masonry supported on solid rock.

The maximum stress to which any metal in the structure is to be submitted shall conform to what may be understood to be good practice, and the designer must state in his bid the nature of such stresses as may occur, their maximum magnitude and the method of determining them.

The counterbalancing is to be accomplished by plates which are successively removed from or loaded on structure at certain intervals as the dam raises. They are to be so disposed as to defeat any tendency the dam may have to raise or fall in any manner except by moving parallel to itself. The limitations as to weight of leaves hereinbefore stated, may be changed if necessary to render counterbalancing effective at various elevations of the dam, providing the added weight be fully counterbalanced. The counterbalancing shall be so adjusted that the dam may be raised in the usual manner when at its lowest position with five (5) feet of water on it.

At distances of about ten (10) feet along down stream leaf near crest of dam there shall be air check valves to allow egress of air from interior of dam when it is being raised, and to prevent ingress of air when it is being lowered, and it may be desirable to have the advantage of atmospheric pressure on top of dam to lower it in certain cases.

The top surface of down stream leaf of dam shall be protected by timbers in manner similar to that indicated on plans. The weight of timbers shall be included in gross weight of the leaf.

The quality of the materials of construction must be stated in the bid.

The several parts of the structure involved in the design shall in general be as follows:

(1) Outline of foundations and abutments.

(2) Holding down detail at down stream edge of dam.

(3) Down stream leaf of dam.

(4) Hinges joining down stream and up stream leaves.

(5) Rollers sustaining lower edge of up stream leaf and the surface on which said rollers move.

(6) Details at ends of dam to restrain water from its interior.

(7) Supports for ends of up stream leaf.

(8) Counterbalancing apparatus.

Materials of Construction, and Certain Specifications as to Construction and Workmanship.

The various materials of construction shall be classified under the following general heads:

(a) Wrought iron.

(b) Steel, structural.

(c) Steel castings.

(d) Cast iron.

(e) Tobin bronze.

(f) Chain.

(g) Timber.

(h) Workmanship and details of construction.

(i) Machinery.

(j) Dimension stone masonry.

(k) Granite paving block masonry.

(l) Brick.

(m) Sand.

(n) Broken stone.

(o) Portland and natural cements.

(p) Portland cement mortar.

(q) Natural cement mortar.

(r) Portland cement concrete.

(s) Natural cement concrete.

(t) Datum.

(a) *Specification for Structural Iron.*

Character and Finish—All wrought iron must be tough, ductile, fibrous and of uniform quality. Finished bars must be thoroughly welded during the rolling, and be straight, smooth and free from injurious seams, blisters, buckles, cracks or imperfections.

Manufacture—No specific process or provision of manufacture will be de-

manded, provided the material fulfills the requirements of these specifications.

Standard Test Piece—The tensile strength, limit of elasticity and ductility, shall be determined from a standard test piece of as near $\frac{1}{2}$ square inch sectional area as possible. The elongation shall be measured on an original length of eight inches.

Elastic Limit—Iron of all grades shall have an elastic limit of not less than 26,000 pounds per square inch.

High Test or Tension Iron—When tested in specimens of uniform sectional area of at least $\frac{1}{2}$ square inch, taken from members which have been rolled to a section of not more than $4\frac{1}{2}$ square inches, the iron shall show a minimum ultimate strength of 50,000 pounds per square inch, and a minimum elongation of 18 per cent in 8 inches.

Specimens taken from bars of a larger cross section than $4\frac{1}{2}$ square inches, will be allowed a reduction of 500 pounds for each additional square inch of section, down to a minimum of 48,000 pounds, and have an elongation of 15 per cent in 8 inches.

Bending Test—All iron for tension members must bend cold through 90 degrees to a curve whose diameter is not over twice the thickness of the piece, without cracking. At least one sample in three must bend through 180 degrees to this curve, without cracking. When nicked on one side and bent by a blow from a sledge, the fracture must be mostly fibrous.

Angle and Other Shaped Iron—The same sized specimens taken from angle and other shaped iron shall have a minimum ultimate strength of 48,000 pounds per square inch, and a minimum elongation of 15 per cent in 8 inches.

Specimens from angle and other shaped iron must bend cold through 90 degrees to a curve whose diameter is not over twice the thickness of the piece, without cracking.

Plates—The same sized specimens, taken from plates 8 inches to 24 inches in width, shall show a minimum ultimate strength of 48,000 pounds per square inch, and a minimum elongation of 15 per cent in 8 inches; plates from 24 inches to 36 inches wide shall show a minimum ultimate strength of 46,000 pounds per square

inch, and elongate 10 per cent in 8 inches; plates over 36 inches wide shall have a minimum elongation of 8 per cent in 8 inches.

Samples of plate iron shall stand bending cold through 90 degrees to a curve whose diameter is not over three times its thickness, without cracking. When nicked and bent cold, the fracture must be mostly fibrous.

Rivet Iron—Rivet iron shall have the same physical requirements as high test iron, and, in addition, shall bend cold 180 degrees to a curve whose diameter is equal to the thickness of the rod tested, without sign of fracture on the convex side.

Pin Iron—Specimens taken from pin iron under 4 inches diameter shall have a minimum ultimate strength of 50,000 pounds per square inch, and elongate 15 per cent in 8 inches. Rounds over 4 inches diameter, having a minimum elongation of 10 per cent in 8 inches will be satisfactory.

Full Size Test—Full size pieces of flat, round or square iron not over $4\frac{1}{2}$ inches in sectional area, shall have an ultimate strength of 50,000 pounds per square inch, and stretch $12\frac{1}{2}$ per cent in the body of the bar. Bars of a larger sectional area than $4\frac{1}{2}$ square inches, will be allowed a reduction of 1,000 pounds per square inch, down to a minimum of 46,000 pounds per square inch, and stretch 10 per cent in the body of the bar.

Variation in Weight—The variation in cross section or weight of rolled material of more than $2\frac{1}{2}$ per cent from that specified, may be cause for rejection.

(b) Specifications for Structural Steel.

Test Pieces—The tensile strength, limit of elasticity and ductility shall be determined from a standard test piece cut from the finished material and planed or turned parallel; the piece to have as near one-half square inch sectional area as possible, and elongation to be measured on an original length of eight inches; two test pieces to be taken from each heat or blow of finished material, one for tension and one for bending.

Every finished piece of steel shall be stamped on one side, near the middle, with the blow number identifying the melt; and steel for pins shall have melt number

stamped on the ends. Rivet and lacing steel, and small pieces for pin plates and stiffeners, may be shipped in bundles, securely wired together, with the melt number on a metal tag attached.

General—All plates, structural shapes, bars, shafts, and metal material not otherwise specified, shall have the properties and meet the requirements given in what follows. Any deviation from the limits given by these properties and requirements shall be cause for rejection by the Engineer.

Phosphorus—In all cases the amount of phosphorus contained shall not exceed one-tenth of one per cent (0.10 per cent).

Mild Steel—Specimens from finished material for test, cut to size specified above, shall have an ultimate strength of 60,000 pounds per square inch; a deviation of 4,000 more or less than 60,000 (56,000 to 64,000) will be allowed; minimum elastic limit, one-half the ultimate strength; minimum elongation, 25 per cent in eight inches; minimum reduction of area at fracture, 45 per cent.

Before or after heating to a cherry red and quenching in water at 82 degrees Fahrenheit, this steel shall bend 180 degrees to a diameter equal to thickness of the piece tested, without sign of fracture.

Any rivet hole for $\frac{3}{4}$ -inch rivet, punched as in ordinary practice (with center not more than $1\frac{1}{4}$ inches from edge of piece), shall stand drifting to a diameter 25 per cent. greater than the original hole, without cracking, either in the periphery of the hole or in the extreme edges of the piece, whether they be sheared or rolled.

Rivet Steel—All rivet steel shall meet the requirements and have the properties given for *structural steel*, except: The minimum reduction of area shall be 50 per cent; rivets shall bend cold 180 degrees with sides to close contact without sign of fracture, and shall stand the quenching test at a bright yellow heat.

Variation—The variation in cross section or weight of more than $2\frac{1}{2}$ per cent from that specified, will be sufficient cause for rejection.

Pin Steel—All pin steel shall meet the requirements and have the properties given for *structural steel*, except: The mini-

mum elongation shall be 20 per cent; the minimum reduction of area 40 per cent.

Pins, Rollers and Shafts—Up to six inches diameter may be turned out of rolled *pin steel*. The *fixed shaft* shall be forged out of *pin steel* under a steel hammer striking a blow of at least five tons (or in hydraulic forging press). The blooms to be used for *pin steel* shall have at least three times the sectional area of the finished size.

(c) *Steel Castings.*

All steel castings shall have the properties and meet the requirements given in what follows, unless otherwise specified: The amount of phosphorus contained shall not exceed one-tenth of one per cent (0.1 per cent); the ultimate strength shall not be less than 60,000 pounds per square inch; minimum elastic limit, 25,000 pounds; minimum elongation, 15 per cent. All steel castings shall be sound and free from injurious roughness, sponginess, pitting, shrinkage cracks or other cracks, cavities, etc., and shall be thoroughly annealed according to good practice.

(d) *Cast Iron.*

When not otherwise specified, all castings shall be tough gray iron, sound and free from injurious cold shuts or blow holes, true to pattern and of workmanlike finish. Sample pieces one (1) inch square cast from the same heat of metal in sand moulds, shall be capable of sustaining on a clear span of $4\frac{1}{2}$ feet a central load of 500 pounds when tested in the rough bar.

Gearing—Cast iron used in gearing shall have an ultimate tensile strength of not less than 30,000 pounds per square inch, and, of a quality subject to the approval of the Chief Engineer.

Counterbalance Box—Cast iron used in counterbalance box may be ordinary foundry iron, subject to the approval of the Chief Engineer.

Counterbalance Weights—Cast iron used in counterbalance weights may be any cheap scrap or pig, suitable for the purpose.

In every case, castings shall be sound and free from injurious cold shuts or blow holes, true to pattern, and of a workmanlike finish.

(e) *Tobin Bronze.*

All Tobin bronze shall be hot rolled bars, and shall meet the following requirements: The ultimate strength shall not be less than 70,000 pounds per square inch; minimum elastic limit, one-half the ultimate strength; minimum elongation, 15 per cent; to bend cold 180 degrees to a diameter equal to three times the thickness of the test piece, without sign of fracture. This Tobin bronze to be made by expert brass founders, who have had successful experience in making this product, subject to approval by the Chief Engineer.

(f) *Chain.*

Test of Chain—The chain to be made of the best approved chain iron by a competent and responsible chain maker, and shall satisfy the following tests: Minimum breaking strength of $1\frac{1}{2}$ -inch chain, 133,000 pounds; minimum proof load of 66,500 pounds which shall be applied to each length of finished chain without distorting the links of the chain or injurious strain. (See under head of *Workmanship and Details of Construction.*)

Minimum breaking strength of $\frac{3}{8}$ -inch crane chain, 7,200 pounds; minimum proof load of 3,600 pounds, which shall be applied to each length of finished chain without injurious strain.

(g) *Timber.*

The timber shall be strictly first-class white oak; sawed true and out of wind, full size, free from wind shakes, large or loose knots, decayed or sap wood, worm holes, or other defects impairing its strength or durability. It will be subject to the inspection of the Chief Engineer.

(h) *Workmanship and Details of Construction.*

General—All workmanship shall be first-class in every particular. All parts shall be free from undue twists and bends. All steel shall be properly annealed. No metal shall be worked at a heat injurious to that metal. The edges of all sheared plates shall be planed or milled.

Punching—The diameter of the punch shall not exceed by more than 1-16 inch, the diameter of the rivets to be used, and all holes must be clean cuts without torn or ragged edges. Rivet holes must be accurately spaced; the use of

drift pins will be allowed only for bringing together the several parts forming a member, they must not be driven with such force as to disturb the metal about the holes; occasional variations may be corrected by reaming. Holes in plates $\frac{5}{8}$ inch or more in thickness shall not be punched but shall be drilled.

Riveting—Rivets must completely fill the holes, have full heads concentric with the rivet, of a height not less than .6 the diameter of the rivet, and in full contact with the surface, or be countersunk when so required and machine driven wherever practicable. No loose rivets will be allowed.

Field Riveting and Bolting—All parts to be assembled in the shop, and after adjusting to exact position the bolt and rivet holes shall be drilled or reamed in position and pieces marked so that when taken down and erected in field the parts will easily and surely assemble in exact position, and be securely bolted before any field riveting is done.

Bolts—All bolts, when not otherwise specified, are to be turned to a driving fit in reamed holes, and all nuts and beds faced square with axis of thread and bolt. When bolts are in shear, plate washers shall be used thick enough to keep thread out of bearing except in very thick plates, or an approved recessed nut may be used. All screw threads shall be U. S. standard unless otherwise specified or directed.

Pins—Shall be turned true to size and straight. The diameter of pin shall be 1-50 inch smaller than the diameter of the pin hole.

Pin and Bolt Holes—When not otherwise specified, all pin and bolt holes shall be bored (not punched) exactly normal to plane of piece, and when required shall be reamed with a standard reamer, after parts are assembled in correct position.

Web Plates—Web plates of all girders shall be arranged so as not to project beyond the faces of the flange angles, nor to be more than one-sixteenth inch below the face of these angles at any point; except, web-plates at gate bearings shall project enough to be planed down with the angles so that they will all bear on planed back of cast steel bearing channel.

Stiffeners—All stiffeners shall be ground

or machined to a tight fit against the flanges at both ends of stiffeners.

Fillers—All fillers shall fill out the full space as far as practicable.

Cement Filler—All inclosed spaces shall be filled solid with some approved material which will exclude water and stand freezing.

Roller Bed Plate—The $1\frac{1}{2}$ by 20 inch universal mill plate shall be accurately straight and true, and if the Chief Engineer shall so direct the roller surface shall be planed true after said plate has been riveted in place.

Chain—The chain shall be of the quality known as special pitch crane chain made to fit the pocketted chain wheel and run freely over the wheel under maximum load after applying to chain the prescribed proof test; this maximum load will not exceed three-quarters of the proof test load.

Chain Wheel—The pocketted chain wheels shall be exact duplicates of accurate and uniform pitch as shown on Plan No. 7, the contractor to furnish the chain-maker a duplicate chain wheel without cost to the Sanitary District. The hubs of all chain wheels shall be lined with bronze bushings forced in with a press and shall turn freely on fixed shaft under maximum load, and be provided with proper facilities for oiling journals.

Painting—All iron or steel before leaving the shop shall be cleaned from all loose scales and rust, and be given one good coat of pure linseed oil. All surfaces in contact with each other shall receive one heavy coat of approved paint before assembling, and all finished surfaces shall be coated with white lead and tallow before leaving shop. Bottoms of bed plates and any parts not accessible for painting after erection, shall have two coats of approved paint at works. After erection, all iron and steel work shall be thoroughly and evenly painted with two coats of paint of quality and color approved by the Chief Engineer.

Inspection—All facilities for inspection of material and workmanship shall be furnished by the contractor to inspectors, and the Chief Engineer and his inspectors shall be allowed free access to any part of the works in which any portion of the material is made.

The contractor shall furnish without charge such specimens (prepared) of the several kinds of material to be used, as may be required to determine their character.

Final Acceptance—Any material or workmanship which does not satisfy the requirements of these specifications may be rejected by the Chief Engineer at any time before the final acceptance of the work, and the contractor shall make good all deficiencies at his own cost. The fact that the authorized inspectors have accepted said material or workmanship shall not make the Sanitary District liable for extra cost above that specified in the contract, for replacing same with material or workmanship accepted by the Chief Engineer on final acceptance.

(i) *Machinery.*

In General—All material and workmanship shall be first class in every particular, and all parts shall be made as rigid and durable as practicable by approved shop methods. The journals and bearings about *ratchet gear* shall be made with the least practicable amount of spring and lost motion. Such details as may not be fully developed or shown on the drawings, shall be developed in harmony with the design. So far as practicable, all similar parts shall be made duplicate and interchangeable. All subject to the approval of the Chief Engineer.

Fixed Shaft—The fixed shaft shall have a hole ($1\frac{1}{4}$ to $1\frac{1}{2}$ inch diameter) bored through its axes from end to end, and shall be turned to correct size and polished, after which it shall be thoroughly annealed. Should this treatment develop signs of flaws or other injurious defects the piece shall be rejected. The fixed shaft shall be properly keyed in its bearings.

Shaft Couplings—The shaft couplings are designed to adjust to a change of temperature of 150 degrees. This is accomplished by an expansion box coupling shown on Plan No. 2. One shaft end is fixed in the coupling box by a taper key; the other shaft end is secured from rotating in the box by two parallel keys fixed in opposite sides of shaft end and fitting accurately but easily in key ways cut in box.

Rollers—All rollers shall be made of *Pin Steel* and be finished truly cylindrical with the axes bored concentric, according to the

dimensions on Plans No. 8 and 9. The roller bushings are to be cut from seamless drawn brass tubes of uniform size, having concentric surfaces, and forced into place with a press, and then finished inside with standard reamer. The finished rollers shall be exact duplicates, and shall turn concentric on the pins or journals with clearance of 1-64 to 1-50 inch. All rollers shall be provided with proper facilities for oiling the journals.

Roller Frames—The bars of the roller frame shall be accurately straight and true, and shall be planed or surfaced to insure square bearings on turned pins or journals. The pin holes shall be so made that all the rollers shall run parallel in the same plane with axes, all normal to the bars of roller frames. (See Plans No. 8 and 9.)

Roller Pins—Shall be made of *pin steel*, and be exact duplicates and interchangeable.

Wedge Bar—Shall be straight and true, with sides planed or surfaced parallel.

Wedge Surfaces—The *wedge tongues* and *wedge bars* (See Plans No. 8 and 9) for all the gates shall be made exact duplicates, so as to be interchangeable. The inclined surfaces of both wedge tongues and wedge bars are to be milled with special mills, shown in profile on Plan No. 8 or 9.

The slopes of all these wedge surfaces and the pitch of same shall be exact and uniform throughout all of them.

The drilling and reaming in the wedge tongues and adjacent steel channels shall be made accurate and duplicate by the use of suitable jigs or other approved devices.

Journals and Friction Surfaces—In general, all journals and shaft bearings and all other friction surfaces shall be lined with brass or other approved non-corrosive metal, and every precaution used to insure durability and easy working after standing idle exposed to weather conditions for long periods of time.

Expansion—All bridge girders are designed to expand over a range due to a change of temperature of 150 degrees Fahrenheit. One end of each girder shall be securely anchored to pier by fox-tail bolts, and coupled to adjacent girder with fish-plates bolted through oblong holes in girders so that the girders will be free to adjust to changes of temperature.

In the case of the bridge over towers, for any pair of girders, the pedestal bearing for 4-inch shaft and the girder anchorage to pier shall be on the same side of shaft coupling.

Oiling Facilities—All moving parts needing lubrication shall be provided with suitable oil holes or other approved devices, subject to approval.

Drawings—The contractor will be expected to verify the correctness of the drawings, and will be required to make, without extra charge, any changes in the work which are necessitated by errors, where such errors could have been discovered by an inspection of the drawings.

The contractor will be expected to make, at his own cost, whatever shop drawings may be required, and as soon as made, shall furnish, free of charge, two copies of each to the Chief Engineer.

Patterns, Etc.—The following patterns, tools, etc., used in executing this contract shall be the property of the Sanitary District, and shall be delivered to said Sanitary District by the contractor; properly boxed and packed, at the time the contract is completed, and without cost to said Sanitary District:

(1) Patterns of all special metal castings.

(2) Special templates or jigs used in milling and drilling *wedge tongues* and *wedge bars*.

(3) Special mills used in milling *wedge tongues* and *wedge bars*.

(4) *Dimension Stone Masonry*.

The dimension stone masonry shall be made of sizes of stone indicated on Plan No. 4, including the joints. The stone shall be either what is known commercially as Bedford or Animosa stone, of a quality to be approved by the Chief Engineer, the bidder to specify the stone on which his bid is based. The stones shall be bedded thoroughly on joints of Portland cement mortar as near as practicable one-half ($\frac{1}{2}$) inch thick. All vertical joints shall be one-half ($\frac{1}{2}$) inch thick, as near as may be, and shall be filled solid with Portland cement mortar grout, put in in such quantities at a time and in such manner as may be required by the Chief Engineer. The joints, when finished, shall be completely filled with the mortar so as to be water tight.

All stones shall be set to grade and position as given by the Chief Engineer. All stones shall be clean, and the work kept wet and covered from the sun while mortar is setting. All joints shall be pointed with specified mortar or struck as directed by the Chief Engineer.

(k) *Granite Paving Block Masonry.*

The granite paving blocks shall be of a quality to be approved by the Chief Engineer. They shall not be less than four (4) inches thick nor more than four and one-half (4½) inches thick. They shall have lengths of not more than fifteen (15) inches nor less than ten (10) inches. They shall have a depth of between six (6) and seven (7) inches. They shall have shapes approximately as near as practicable to a parallelopipedon. The courses of granite paving block masonry shall, when laid, have a thickness of five (5) inches; courses being horizontal in the piers and vertical in the flooring. All joints shall be filled completely with Portland cement mortar. The manner of laying the stones shall be such as the Chief Engineer will approve in order to insure the filling of all joints. All stones shall be clean, and work kept wet while mortar is setting.

(l) *Brick.*

All bricks shall be first-class sewer bricks made of well tempered and puddled clay, free from lime and pebbles. They shall be hard burned, clear ringing and well formed. The size shall be uniform, viz.: 8x4x2½ inches. All joints shall be completely filled with natural cement mortar, horizontal joints being not less than one-half (½) inch thick, and vertical joints not more than one-half (½) inch thick. Every brick shall be laid by being pushed into a full bed of mortar so as to completely fill the joints, and not by filling the joints after the brick is laid. All exposed joints shall be struck neatly.

(m) *Sand.*

All sand used to be clean, sharp and free from loam or pebbles in a degree to be approved by the Chief Engineer.

(n) *Broken Stone.*

The broken stone shall be of sound and hard limestone, free from dust and dirt, the largest stone being such as will pass through a ring one (1) inch in diameter.

(o) *Portland and Natural Cements.*

The best Portland and natural cements shall be used, brand and quality to be subject to approval by the Chief Engineer, who shall, from time to time, cause such tests to be made as may seem to him proper for determining the quality of the cement which is to be used in the work. The development of tensile strength for Portland cement shall be 400 pounds per square inch after having set seven days, and for natural cement 100 pounds per square inch after having set seven days. All lumpy, dirty or damaged cement shall be rejected; also damaged and short weight packages.

(p) *Portland Cement Mortar.*

Portland cement mortar shall consist of one part by volume of the specified Portland cement to two parts of the specified sand. The mixture shall be made and used in a manner to be approved by the Chief Engineer in order to secure first class workmanship.

(q) *Natural Cement Mortar.*

Natural cement mortar shall consist of one part by volume of the specified natural cement to the one part of the specified sand. This mixture shall be made and used in a manner to be approved by the Chief Engineer in order to secure first-class workmanship.

(r) *Portland Cement Concrete.*

The Portland cement concrete shall consist of two parts by volume of broken stone to one part by volume of the specified Portland cement mortar. The stone and mortar shall be thoroughly incorporated so as to make a homogeneous mass. In the foundations the concrete shall be laid in courses not exceeding four (4) inches in thickness and shall be rammed in a manner to be approved by the Chief Engineer. On being placed the concrete shall have a wetness such as to permit quaking or mobility likened to liver.

(s) *Natural Cement Concrete.*

The natural cement concrete shall consist of two parts by volume of broken stone to one part by volume of the specified natural cement mortar. The stone and mortar shall be thoroughly incorporated so as to make a homogeneous mass. The concrete shall be laid in courses not exceeding in thickness two courses of brick, and shall

be rammed in a manner to be approved by the Chief Engineer. On being placed the concrete shall have a wetness such as to permit quaking or mobility likened to liver.

(t) *Datum.*

Datum, as used in these specifications, shall be understood to be Chicago datum as established by the Sanitary District.

GENERAL.

Clearing and Grubbing—The contractor will be required to remove all trees, stumps, buildings, fences or other incumbrances from the site of the work, or that may be in the way of any collateral or subsidiary work herein specified. All such material shall be disposed of as directed by the Chief Engineer. The cost of this work shall be included in the prices for excavation as herein stated.

Drainage—The contractor is to provide all necessary pumping machinery, and is to operate the same at his own cost and expense during the time of doing the work and until the whole work is fully completed and inspected, as provided for in other sections of this contract. The contractor shall dispose of any water pumped in such manner as not to interfere with the operations of other contractors for the Sanitary District.

Explosives—The contractor is to furnish all explosive compounds for blasting the material provided to be excavated under this contract; and, whereas, the storing, handling and use of so large an amount of explosive material requires the utmost care and discrimination, it is, therefore, understood and agreed that the said contractor shall arrange for the storage of all explosive materials at a distance of not less than 600 feet from the work, or from any other magazine, or from any dwelling occupied for a habitation, and that not more than 5,000 pounds shall be kept in one place. It is further understood and agreed that said explosive material shall in no case be brought on to the work except when needed for the purpose of charging the blast holes, and then only in such quantity as is needed for the particular work in hand, and that none but skilled and careful men shall be employed in the handling or use of said explosives, and that no liquid explosive shall be used.

It is further understood and agreed that

the ground surrounding all magazines shall be kept free of vegetable or combustible material for a radius of one hundred feet, and that their walls shall be made bullet proof, to the height of one foot above the contained explosives, and that in no case shall they be made of brick or stone. It is also understood and agreed that such signals of danger, as may be directed by the Chief Engineer, shall be given or displayed before the firing of any blast, and that the said contractor shall conform his acts to and obey all rules and regulations relative to the handling of explosives and the firing of blasts, for the protection of life or property, which may be made by the Chief Engineer from time to time.

Extra Work—All claims for extra labor or material furnished by the contractor, or for damages from any cause whatever, must be reported to the Chief Engineer at the time such labor or material are furnished, or such damages occur, and they must also be presented to him in writing at the end of the month; provided, that nothing shall be paid for as extra work that can be classified under any of the heads upon which prices are fixed by this contract.

Whenever work is required to be done which is not now contemplated or covered by the prices hereinafter given, the Chief Engineer shall fix such prices for the work as he shall consider just and equitable, and the contractor shall abide by such prices; provided, he enters upon such work with full knowledge of the prices so fixed by the Chief Engineer; but if the contractor declines executing said work at the prices fixed by the Chief Engineer, then the Sanitary District may enter into contract with any person or persons for its execution the same as if this contract had never existed; and if extra work, or work not provided for in this contract, is performed by the contractor before prices have been fixed for such work, then the Chief Engineer shall estimate the same at such prices as he shall deem just and reasonable, and his decision shall be final, and the said contractor shall accept of said prices in full satisfaction of all demands against the Sanitary District for said extra work; provided, that if the extra work done under this contract is of such a nature, being distinct from other work being done by said contractor, that the actual cost of the same can be deter-

mined, then the said contractor shall receive, and the Sanitary District shall pay, in full satisfaction of the same, the actual cost of the work, with 15 per cent. added; provided, further, that nothing shall be deemed extra work which can be measured or estimated under the provisions of this contract.

Responsibility of Contractor—All the work provided for in this contract is to be done under the direction and supervision of the Chief Engineer and his properly authorized agents. The contractor is to be guided by the lines, stakes, marks and grades given by them, and is to carefully preserve the same as far as possible during the progress of the work, and is to furnish all needed facilities, without charge therefor, to enable the Chief Engineer to properly give lines and grades and to measure the work from time to time.

All work will be subject to inspection by the said Chief Engineer and his said agents, and if not in accordance with the requirements of this contract it is to be made good by the contractor.

The contractor will be responsible for the entire work until completed and accepted by the Sanitary District. The contractor will be required to give his personal attention to the fulfillment of this contract and to the execution of the work. He is to keep the same under his control, and will not be allowed to sub-let all or any part of it; it being distinctly understood and agreed that the sub-letting of the work covered by this contract, or any part thereof, shall, after ten days notice, work a forfeiture of the contract at the option of the Sanitary District.

The contractor will not be allowed to assign by power of attorney, or otherwise, any portion of the moneys that may become due through the workings of this contract. In case the contractor fails to comply with the provisions of this contract as to progress and character of work, he shall be duly notified in writing, and ten days after the giving of said notice, the party of the first part may declare this contract forfeited, if there is substantial failure to comply with the provisions.

Changes in Plan—In addition to the reservations hereinbefore made, the Sanitary District reserves the right to make alterations in the line, grade and minor details

of plan, form, dimensions, or material of the work herein provided for, either before or after the beginning of construction; provided, that if alterations are made, the general character of the work as a whole is not thereby changed. If such alterations diminish the quantity of work to be done, they shall not constitute a claim for damages, or for anticipated profits on the work that may be dispensed with; if they increase the amount of work, such increase shall be paid for according to the quantity of the work actually done, and at prices and rates established for such work under this contract. Notice of any change of plan must be given the contractor in writing. And it is expressly agreed that no alterations or additions or extra work are to be paid for unless directed in writing.

Tools—The contractor is to furnish all the tools of every kind and description, including pumps, cars and tracks necessary to the full and complete carrying out of this contract, and on completion of the work, is to remove all tools, buildings and material of all kinds from the right of way of the Main Drainage Channel.

Precautions—Whatever precautions may be necessary to render any portion of the work more secure in any respect, or to decrease the liability of accident from any cause, or to avoid contingencies which are liable to delay the completion of the work, shall be taken by the contractor.

Workmen—The contractor shall employ competent foremen and laborers, and shall discharge, at the request of the Chief Engineer, any incompetent or unfaithful men in his employ. None but men expert in their respective branches of work shall be employed where special skill is required.

Damages—If any damages shall be done by the contractor, or by any person or persons in his employ, to the owner or occupants of lands or to any property adjoining, or in the vicinity of the work herein contracted to be done, or to a neighboring contractor, the Chief Engineer shall have the right to estimate the amount of said damages, and to cause the Sanitary District to pay the same to the said owner or occupant, and the amount so paid for such damages shall be deducted from the money due said contractor under this contract.

Said contractor covenants and agrees to pay all damages for any personal injury

sustained by any person, growing out of any act or doing of himself or his employes, that is in the nature of a legal liability, and he hereby agrees to indemnify and to save the Sanitary District harmless against all suits or actions of every name and description brought against the said Sanitary District for or on account of any such injuries, or such damages received or sustained by any person or persons by or from said contractor, his servants, agents or employes, in the execution of said work; or by or in consequence of any negligence in guarding the same; or by or on account of any act or omission of said contractor, his agents or employes; and the said contractor further agrees that so much of the money due to him, under and by virtue of this contract, as shall be considered necessary by the Board of Trustees of the Sanitary District, may be retained by the said Sanitary District until such suit or claim for damages, as aforesaid, shall have been settled, and evidence to that effect furnished to the satisfaction of the said Board of Trustees.

Sanitary District Law—The said contractor hereby agrees to carry on all the work provided for in this contract, in strict conformity to the requirements of the law under which the Sanitary District of Chicago is organized, entitled, "An Act to create Sanitary Districts and to remove obstructions from the Desplaines and Illinois Rivers," approved May 29, 1889, in force July 1, 1889, which provides in Section 11, among other things, that "No person shall be employed on said work unless he be a citizen of the United States, or has in good faith declared his intentions to become such a citizen. In all cases where an alien after making his declaration of intention to become a citizen of the United States shall, for the space of three months after he could lawfully do so, fail to take out his final papers and complete his citizenship, such failure shall be prima facie evidence that his declaration of intentions was not made in good faith. And that eight hours shall constitute a day's work."

Time—The contractor agrees to begin work within thirty days after the execution of this contract, weather permitting. Provided, that the said contractor agrees not to proceed to the execution of any part of the work until he shall have been notified

by the said Sanitary District to proceed therewith.

The works hereinbefore specified to be done are to be prosecuted with all possible diligence and completed in the year 1896.

Prices—In consideration of the said work being carried on and completed in time and manner as hereinbefore specified, the said party of the first part agrees to pay to the said party of the second part the following amounts for each kind of work, respectively, and the said party of the second part agrees to receive and accept the same as full compensation for the performance of the work, including the furnishing of the material, tools, labor, etc., to-wit:

(a) Lump sum price for all work applying to sluice gates constructed above elevation of 17.75 feet below datum, dollars (\$.....).

(b) Price per cubic yard for masonry applying to sluice gates below elevation 17.75 feet below datum, dollars (\$.....).

(c) Price per cubic yard for concrete applying to sluice gates below elevation 17.75 feet below datum, dollars (\$.....).

(d) Price per cubic yard for excavation, measured in excavation, dollars (\$.....).

(e) Lump sum price for all metal, timber and labor entering into construction of bear trap, dollars (\$.....).

Time and Manner of Payment—For the purposes of payment the elements of this contract shall be classified as iron work and machinery, and foundations and masonry. All work of whatever kind, including masonry, above the elevation of 17.75 feet below datum, shall be classed as iron work and machinery.

No delivery of iron work and machinery will be estimated for payment before June 1st, 1896. As soon as all of the iron work and machinery shall have been delivered upon the site of the work, a payment of one-third ($\frac{1}{3}$) of the contract price of the same shall be made. When all of the iron work which is to be set into the masonry shall have been placed and properly built into its final position then a second payment of one-third ($\frac{1}{3}$) of the contract price

of same shall be made, and when the entire work and machinery is placed in its proper positions and is in thorough working order, then, upon its acceptance by the Chief Engineer, the final payment of the remaining third of the contract price shall be made.

For all the foundation and mason work on which there is a specified price per cubic yard, monthly estimates will be made and returned by the Chief Engineer, and payments made on or before the 10th day of each month for the work done during the preceding month to the amount of $87\frac{1}{2}$ per cent of the value thereof.

Failure to Complete—It is further agreed by the said party of the second part that if the work to be done under this contract shall be abandoned, or if it shall be assigned by him, or if he loses control of the work from any cause, excepting acts of God and the public enemy, or if the rate of progress is not such as to insure its completion within the time specified, or if at any time the Chief Engineer shall be of opinion and shall so certify in writing to the said party of the first part that said work or any part thereof is unnecessarily and unreasonably delayed or that the contractor is wilfully and persistently violating any of the conditions or covenants of this contract, or is not executing said contract in good faith, the said party of the first part shall have the power to notify said contractor to discontinue all work, or any part thereof, as may be designated by said party of the first part, and the said party of the first part shall thereupon have the power either to complete said work by contract or to employ such men and teams, and to obtain such machinery, implements and tools, and to purchase such material as the said Chief Engineer may deem necessary to complete the work herein described, or any part thereof. And in so doing, said Chief Engineer may use such tools, implements and materials as may be found upon the line of said work. The cost of doing such work shall be charged to the said contractor, and any moneys that may then be due, or may at any time thereafter become due to said contractor, under and by virtue of this contract, or any part thereof, shall be applied by first party to the payment of such cost so far as the same shall suffice therefor, and the remainder of the cost of so

completing said work, if any, shall be paid by said contractor to first party on demand.

Payment of Laborers—Said contractor shall pay the laborers employed by him promptly at regular intervals, and at least twice each month, and shall not pay said laborers in scrip, checks, or other evidences of indebtedness, nor in any manner other than with lawful currency of the United States, and if at any time during the progress of said work the said contractor shall fail or neglect to pay for labor performed and in manner aforesaid, or for material furnished upon said work, then the party of the first part shall have power to pay for such labor or such material out of any money or moneys that may be due to said contractor, and said amount so paid shall be retained out of any money due or to become due to said contractor.

In any such case the party of the first part is hereby authorized and empowered by the said party of the second part to ascertain the amount or amounts due or owing from said contractor to any laborer or laborers or to any person for material furnished, in such manner and upon such proof as it may deem sufficient, and without giving any notice of such proceedings to said contractor, and the amount or amounts so found by the said party of the first part to be due and owing to said laborer or laborers, or to said material men, shall be final and conclusive evidence as against said contractor, and may thereafter be paid over by the said first party to such laborer or laborers or material men.

Final Payment—The said party of the second part further agrees that he shall not be entitled to demand or receive final payment for any portion of the aforesaid work or materials except in the manner set forth in this agreement, nor until each and all of the stipulations hereinbefore mentioned are complied with, and the said Chief Engineer shall have given his certificate to that effect; whereupon the said party of the first part will, at the expiration of thirty (30) days after such completion and the delivery of such certificate, pay, and it hereby binds itself to pay the said party of the second part, in cash, the whole amount of money accruing to said second party under this contract, excepting such sum or sums of money as may be lawfully retained under any of the provisions of this contract hereinbefore set forth. Provided, that nothing

herein contained shall be construed to affect the right hereby reserved of the said party of the first part to reject the whole or any portion of the aforesaid work should the said certificate be found to be inconsistent with the terms of this agreement or otherwise improperly given.

It is further stipulated and agreed that the obligations of this contract shall not be taken as fully performed by the contractor, nor shall the sureties hereto be released until said Regulating Works shall have been tested by the letting of water into the Main Channel and its flowage through said Works; and should such test disclose any defects in material or workmanship not conforming to the original specifications, the contractor shall replace all such defective parts at his own expense.

Health Regulations—Said party of the second part agrees to make provision for an ample supply of suitable drinking water for employes, and to take such means as shall effectually prevent the creation of a nuisance on any part of the right of way of said Sanitary District, or adjacent thereto.

Contractor's Bond—The contractor shall furnish a bond in the sum of fifty thousand (\$50,000) dollars, with good and sufficient sureties, the same to be satisfactory to the Board of Trustees of the Sanitary District, conditioned for the faithful performance of all the terms and conditions of this contract, and should the sureties on said bond at any time fail financially, or be, in the opinion of said Board of Trustees, insufficient security for the penalty of said bond, then, in that case, they may, on giving ten days notice thereof in writing, require said contractor to furnish a new or additional bond in the place of the bond so having become insufficient or worthless.

IN WITNESS WHEREOF, on the day and year first above written, the said Sanitary District of Chicago has caused this agreement to be signed by its President and attested by its Clerk, and its corporate seal to be hereto affixed, and the said party of

the second part ha.. hereunto set hand.. and seal..

THE SANITARY DISTRICT OF CHICAGO.

(SEAL) By.....

President.

Attest:

Clerk.

.....(SEAL.)

.....(SEAL.)

.....(SEAL.)

.....(SEAL.)

The following is the

"CONTRACTOR'S BOND:

Know all Men by these Presents, That
we.....
.....
.....
of.....
are held and firmly bound unto the Sanitary District of Chicago, in the penal sum of
Dollars, lawful money of the United States, for the payment of which sum of money well and truly to be made, we bind ourselves, our heirs, executors and administrators, jointly and severally, firmly by these presents.

Sealed with our seals and dated thisday of.....
A. D. 189..

The Condition of the above Obligation is such, that whereas the above bounden
.....
ha...entered into a certain contract with the Sanitary District of Chicago, bearing date the.....day ofA. D 189..., for furnishing, delivering and erecting in place ready for continuous use the various parts of the Regulating Works for the Main Drainage Channel of said Sanitary District of Chicago, to be located between Stations 1510 and 1520 in Contract Section 15 of said Main Channel near Lockport, Will County, Illinois.

Now, if the said.....
 shall in all respects, well and truly keep
 and perform the said contract on.....
 part, in accordance with the terms thereof,
 and the plans and specifications therein
 contained and referred to, and in the time
 and manner therein prescribed, and further
 shall indemnify, keep and save harmless
 the Sanitary District of Chicago against all
 liabilities, judgments, costs, damages and
 expenses, which may in anywise come
 against said Sanitary District or result
 from the carelessness or neglect of said....

Agents, Employes or Workmen, in any
 respect whatever, or which may result on
 account of any infringement of any patent,
 by reason of the materials, machinery, de-
 vice or apparatus used in the performance
 of said contract, and, moreover, shall pay
 to said Sanitary District any sum or sums
 of money determined by the Chief En-
 gineer to be due said Sanitary District, by
 reason of any failure or neglect in the per-
 formance of the requirements of said con-
 tract, and shall pay all claims and demands
 whatsoever, which may accrue to each and
 every person, who shall be employed by
 said.....

in or about the performance of said con-
 tract, then this obligation to be null and
 void, otherwise to remain in full force and
 effect.

And it is hereby expressly Understood
 and Agreed, and made a condition hereof,
 that any judgment rendered against said
 Sanitary District of Chicago, as aforesaid,
 in any suit for damages occasioned by the
 carelessness or neglect of said.....

.....or.....Agents,
 Employes or Workmen, in the premises,
 when notice of the pendency of such suit
 shall have been given said.....

.....shall be con-
 clusive against each and all parties to this
 obligation, as to amount, liability, and all
 other things pertaining thereto.

.....[SEAL]
[SEAL]
[SEAL]
[SEAL]

Approved.....189..

Clerk."

The following is the

PROPOSAL :

To the Board of Trustees of the Sani-
 tary District of Chicago :

GENTLEMEN—The undersigned hereby
 certify that.....have examined the plans
 on file in the office of the Chief Engineer of
 the Sanitary District of Chicago, the an-
 nexed specifications and forms of contract
 for the work, as therein described, and pro-
 pose....to do all the work and to furnish all
 material, tools, explosives, labor and all
 appliances and appurtenances necessary to
 the full completion of all the work to be
 done under said contract, at the rates and
 prices for the said work, as follows, to-wit:

(a) Lump sum price for all work apply-
 ing to sluice gates constructed above eleva-
 tion of 17 75 feet below datum.....
dollars (\$.....).

(b) Price per cubic yard for masonry
 applying to sluice gates below elevation
 17.75 feet below datum.....
 dollars (\$.....).

(c) Price per cubic yard for concrete ap-
 plying to sluice gates below elevation 17.75
 feet below datum.....dol-
 lars (\$.....).

(d) Price per cubic yard for excavation,
 measured in excavation.....
 dollars (\$.....).

(e) Lump sum price for all metal, timber
 and labor entering into the construction of
 bear trap.....dollars
 (\$.....).

The above proposals are based upon the
 conditions and stipulations made in the ad-
 vertisements inviting proposals for said
 work and in accordance with the contract,
 specifications and plans for the same on
 file in the office of the Chief Engineer of
 the said Sanitary District, and should the
 said Board of Trustees award said work to
 the undersigned, we agree to enter into
 contract for the same, and to do the work
 as specified.

In accordance with the requirements of
 said advertisement, there is deposited here-
 with the sum of five thousand dollars,
 which, under the terms of the advertise-
 ment, entitle us to bid on said work, the
 same to be refunded to us upon the faithful
 performance of all the conditions stipulated
 in the said advertisement for proposals.

It is further agreed that should the within proposal for the work to be done by us be accepted, and the contract awarded to us, and we should fail or neglect to enter into contract with the said Sanitary District therefor, in the time and in the manner required by the said advertisement for proposals, and to furnish bonds as therein required, to the satisfaction of the said Board of Trustees, then the said sum of five thousand dollars deposited herewith shall become forfeited to the Sanitary District as liquidated damages:

Name

Address.....

Name

Address.....

Name

Address.....

Name

Address.....

[NOTE—Companies or firms bidding must give the individual names and addresses of the persons comprising such firms.]

Received from the Sanitary District of Chicago the sum deposited with the above proposal, the same being dollars.

.....

.....

CHICAGO,, 1895.”

PROPOSITION FOR ICE PRIVILEGE ON “ALLEN ICE POND” AT LOCKPORT.

The Clerk presented a communication from Yost Brothers, making proposition for the privilege of cutting ice during 1895 and 1896 on the “Allen Ice Pond” at Lockport, as set forth in the communication; and the communication was read.

Mr. Kelly, seconded by Mr. Altpeter, moved that the communication be ordered printed and referred to the Committee on Finance.

The motion prevailed unanimously,

and the communication was ordered printed and so referred.

The following is

THE COMMUNICATION:

“LOCKPORT, Ill., Aug. 31, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—We are desirous of securing from you the privilege of cutting ice for the winter of '95 and '96, on the pond near the Desplaines River and just north of Ninth street, known as the Allen Ice Pond.

It will be necessary to repair the banks, clean out the ditch leading to it from the Desplaines River and cut and remove the weeds in the bed of the pond before the cold weather sets in. This we propose to do at our own cost and expense, and if a crop of ice can be secured, we will pay you one hundred dollars for the entire crop.

But should the winter be such that a crop of ice cannot be obtained, we will make you no payment and ask you for no compensation for our work in repairing the pond, etc. Hoping for an early reply, we are,

Yours truly,

(Signed)

YOST BROS.”

PROTEST OF H. E. FLETCHER CONCERNING CROSSING AT SOUTHWEST BOULEVARD AND THIRTY FIRST STREET.

The Clerk presented a communication from H. E. Fletcher, being a protest against the plans of the District with reference to the Main Channel crossing at Southwest Boulevard and Thirty first street; and the communication was read.

Mr. Boldenweck, seconded by Mr. Cooley, moved that the communication be referred to the Committee on Judiciary without reading.

The motion prevailed unanimously, and the communication was so referred.

ADJOURNMENT.

On motion of Mr. Boldenweck, seconded by Mr. Russell, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

SEPTEMBER 25, AND OCTOBER 2 AND 9, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and eighty-second regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, September 25, 1895, at 1:30 o'clock P. M.

In the absence of the President, the Clerk called the Board to order.

On roll call there were no members of the Board present.

At 2 o'clock P. M., there still being no members of the Board present, and consequently no quorum, the Board stood adjourned.

THOS. F. JUDGE,
Clerk.

REGULAR MEETING.

The two hundred and eighty-third regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto building, Wednesday, October 2, 1895, at 2 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Cooley, Eckhart and Wenter—three (3) members, were present. No quorum.

ADJOURNMENT.

On motion of Mr. Cooley, seconded by Mr. Eckhart, the Board then adjourned.

THOS. F. JUDGE,
Clerk.

REGULAR MEETING.

The two hundred and eighty fourth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, October 9, 1895, at 2 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—nine (9) members, were present.

MINUTES.

The minutes of the regular meeting held September 11, 1895, and of the adjourned session of the same regular meeting, held September 18, 1895, were approved as printed, on motion of Mr. Boldenweck, seconded by Mr. Russell.

REPORT OF TAX LEVY WARRANTS AND APPROPRIATION FOR PAYMENT OF DISTRICT BONDS AND INTEREST.

By unanimous consent, Mr. Eckhart, Chairman, presented a report from the Committee on Finance, transmitting form of tax levy warrant, drawn against the tax levy for 1895, with interest coupon attached; and also by ordinance appropriating \$1,000,000 for the payment of principal and interest on District bonds and the payment of interest on tax levy warrants; and the report, with accompanying form of warrant and ordinance was read.

Mr. Eckhart, seconded by Mr. Kelly, moved that the report be adopted, ordered printed and with enclosures placed on file, the recommendations made therein concurred in, and the accompanying form of warrant and interest coupon approved.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Russell and Wenter—eight (8). Excused and not voting—Mr. Prendergast—one (1). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and with enclosures placed on file, the recommendations made therein in concurred in, and the accompanying form of warrant and interest coupon approved.

Mr. Eckhart, seconded by Mr. Boldenweck, then moved the passage of the accompanying ordinance.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Russell and Wenter—eight (8). Excused and not voting—Mr. Prendergast—one (1). Nays—None.

Upon which result the President declared the motion carried, and the ordinance passed.

The following is

THE REPORT:

“CHICAGO, Oct. 9th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Committee on Finance have for some time had under consideration the matter of issuing to contractors, in payment for work performed and material furnished, the warrants of the District payable out of the tax levy for the year 1895, when the same is collected.

We have been advised by the Attorney and General Counsel that the District has the undoubted authority to issue warrants of the kind proposed.

Arrangements have been made with the banks which have been the depositories of the funds of the District, for the cashing of warrants for the present, if presented by contractors for that purpose. They will be taken by them at their face value.

Since our bond ordinances have all provided that an amount sufficient to pay the interest and such portion of the principal of our bonds as falls due each year shall be included in the amount of the tax levied for the successive years, it is deemed advisable in order to avoid any question as to obligations prior to those of the warrants, to appropriate, from the money in the treasury, a sum sufficient to provide for payments of interest and principal of bonds as same become due.

We have therefore caused an ordinance to be prepared, appropriating from the money now in the hands of the Treasurer the sum of one million (\$1,000,000) dollars for the payment of the interest and principal of the bonds of the District as the same shall fall due, and also for the payment of interest on the warrants proposed to be issued against the tax levy for 1895. We submit said ordinance herewith and recommend that it be passed by your Honorable Body.

We have also caused to be prepared a form of warrant to be issued to contrac-

tors. To the warrant is added the separate promise of the District to pay interest at the rate of six per cent per annum upon the warrant from the date thereof until paid. A copy of said proposed form of warrant is transmitted herewith.

We recommend that this form of warrant be adopted by your Honorable Body, and that the Clerk be directed to have a sufficient number thereof printed, and that in lieu of the usual warrants drawn by him upon the Treasurer for the payment of contractors' estimates, warrants against the tax levy of 1895, in the form herein proposed, be drawn by said Clerk and delivered by him to contractors in payment of said estimates until the further order of the Board.

Respectfully submitted,

(Signed) B. A. ECKHART,
Chairman.
W. H. RUSSELL,
THOMAS KELLY,
Committee on Finance."

(Accompanied by form of warrant and interest coupon and ordinance.)

The following is

THE FORM OF TAX WARRANT AND INTEREST COUPON:

"NO..... \$.....

TREASURER OF THE SANITARY DISTRICT OF CHICAGO

CHICAGO, Ill.....189..

From the tax levy of the year 1895, appropriated and levied for the corporate purposes of said Sanitary District, when received by you, pay..... or bearer, the sum of.....dollars, being for material furnished and work done for the corporate purposes of said District.

The taxes to be collected from the Sanitary District tax levy of 1895 are specially appropriated, set apart and pledged to the payment of this and all warrants drawn against said tax levy, and the aggregate amount of said warrants does not exceed seventy-five per cent of the total amount of said tax levy. This warrant is payable solely from said taxes when collected and not otherwise, and is receivable in payment of the taxes against which it is issued.

.....
President of the Board of Trustees.

Countersigned:

.....
Clerk of the Sanitary District of Chicago.

NO.....

THE SANITARY DISTRICT OF CHICAGO

Tax Warrant Interest Coupon.

CHICAGO, Ill.....189..

The Sanitary District of Chicago will pay interest upon its warrant No.....issued against the tax levy of 1895 at the rate of six per cent per annum from the date thereof until paid; provided, that if the Treasurer, by publication or otherwise shall give notice that he has money in his hands from the tax levy, against which said warrant is issued, available for its payment and shall fix a date for the presentation and payment thereof, interest thereon after the date so fixed shall not be paid.

.....
President of the Board of Trustees.

Countersigned:

.....
Clerk of the Sanitary District of Chicago."

The following is

THE ORDINANCE:

"Be it Ordained by the Board of Trustees of the Sanitary District of Chicago:

SECTION 1. That there is hereby appropriated out of the funds of this District, now in the hands of the Treasurer, the sum of one million (\$1,000,000) dollars, to be applied by the Treasurer to the payment of the principal and interest of the bonds of this District, as the same shall become due, and to the payment of the interest on warrants of this District issued against the tax levy for the year 1895.

SEC. 2. This ordinance shall be in force from and after its passage."

APPROVAL OF EMPLOYMENT OF ADDITIONAL MEN FOR SPECIAL SERVICE.

The Clerk presented a report from the Chief Engineer, asking the approval of his action in the employment of sixteen (16) men for special service, additional to those provided by the rules, as set forth in the report; and the report was read.

Mr. Boldenweck, seconded by Mr. Kelly, moved that the report be ordered printed and placed on file, and the action of the Chief Engineer, as set forth therein, approved.

On roll call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—Nine (9). Nays—None.

Upon which result the President de-

clared the motion carried, the report ordered printed and placed on file, and the action of the Chief Engineer, as set forth therein, approved.

The following is

THE REPORT:

“CHICAGO, Oct. 8, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—From time to time as the service has required it, I have added men to the force as follows:

Three computers at \$75.00 per month; six inspectors at \$75.00 per month; one general inspector at \$100.00 per month; four rodmen on surveys at \$75.00 per month; one recorder on survey at \$90.00 per month; and one draughtsman at \$100.00; for these appointments I have no authority from your Honorable Body, and I therefore ask you to confirm my action so that the men can be paid.

Respectfully submitted,

(Signed)

ISHAM RANDOLPH,

Chief Engineer.”

VOUCHERS.

The Clerk presented the following vouchers:

PAY ROLLS.

Engineering Department, Chief Engineer's roll, (Sept., 1895).....	\$1,441 67	
Engineering Department, Division of Construction, (Sept., 1895).....	5,431 43	
Engineering Department, Division of Drafting and Designing, (Sept., 1895)	2,275 50	
Engineering Department, Division of Records, (Sept., 1895).....	912 83	
Engineering Department, Special Service roll, (Sept., 1895).....	6,388 80	
Engineering Department, Discharged Mens' roll, (Sept., 1895).....	24 27	
		\$16,474 50
Clerical Department, Clerk's roll, (Sept., 1895).....		891 67
Law Department, Attorney's roll, (Sept., 1895).....	\$1,288 33	
Law Department, Joliet roll, (Sept., 1895).....	458 34	
		\$ 1,746 67
Treasury Department, Treasurer's roll, (Sept., 1895).....		166 67
General Account, General roll, (Sept., 1895).....	250 00	
General Account, Towpath roll, (Sept., 1895).....	203 00	
General Account, Trustees' roll, (Sept., 1895).....	2,333 33	
		\$ 2,786 33
Police Department, Marshal's roll, (Sept., 1895).....		4,268 48
Total.....		\$26,334 32

ENGINEERING DEPARTMENT.

P. F. Pettibone & Co., (stationery).....	\$ 12 70
Borden & Selleck Co., (scale).....	4 50
H. G. Paterson, (typewriting).....	6 65
H. S. Norton, (rent—Lemont, September, 1895).....	18 00

R. B. Seymour (Special Engineer—Services re-Measurement Main Channel—

<i>final</i>).....	\$ 900 00	
R. B. Seymour, (traveling).....	5 21	
Isham Randolph, (traveling).....	52 00	
H. A. Miller, (traveling).....	49 10	
	<hr/>	\$ 1,048 16

CLERICAL DEPARTMENT.

Warner's Towel Supply, (towelings).....	\$ 2 00
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LAW DEPARTMENT.

John P. Wilson, (General Counsel, July to Sept., 1895).....	\$1,250 00	
Jos. Donnersberger, (Expert—right of way services, Sept., 1895).....	300 00	
J. F. Snyder, (special legal services, Du Page County).....	200 00	
Edwards & Hancock, (carbon paper)....	3 00	
Callaghan & Co., (court reports).....	3 50	
<i>Chicago Daily Law Bulletin</i> , (subscription).....	3 00	
Warner's Towel Supply, (towelings).....	1 50	
Geo. E. Dawson, (expense).....	203 58	
	<hr/>	\$ 1,964 58

GENERAL ACCOUNT.

Chicago Edison Company, (electric lighting).....	\$ 31 89	
James M. Purcell, (stenographic report of Sec. 10 exercises, Sept. 3, 1895)....	12 00	
	<hr/>	\$ 43 89

POLICE DEPARTMENT.

John Larney, (feed).....	27 85	
W. G. Earnshaw, (livery).....	6 00	
McArthur Brothers Co., (horse shoeing)....	7 75	
C. F. G. Stender, (repairing harness)....	8 85	
Stephenson & Kellar, (livery).....	20 00	
Edward Williams, (expense).....	71 32	
	<hr/>	\$ 141 77
Total.....		\$29,534 72

ENGINEERING DEPARTMENT.

*Construction Account—

		CLAUSE "J" Total Retained.	Amount re- leased on this Voucher.
Griffiths & McDermott, (Sec. 1, Sept. 16, 1895).....	\$ 9,457 79	\$16,307 95	
McArthur Brothers, (Sec. 2, Sept. 16, 1895)	8,400 00		
Gilman & Company, (Sec. 3, Sept. 16, 1895)	19,513 38		
McArthur Brothers, (Sec. 4, Sept. 16, 1895)	9,761 50		
The Qualey Construction Co., (Sec. 5, Sept. 16, 1895).....	16,927 31		\$7,236 00
Mason, Hoge & Company, (Sec. 6, Sept. 16, 1895).....	17,805 38		
Mason, Hoge & Company, (Sec. 7, Sept. 16, 1895).....	13,394 06		
Mason, Hoge, King & Co., (Sec. 8, Sept. 16, 1895).....	8,613 72		

CLAUSE "J"			
	Total Retained.	Amount re- leased on this Voucher.	
Halvorson, Richards & Co., (Sec. 9, Sept. 16, 1895).....	\$10,564 13		
E. D. Smith & Co., (Sec. 10, Sept. 16, 1895) ..	6,420 40		
Mason, Hoge & Company, (Sec. 11, Sept. 16, 1895).....	14,007 43		
Mason, Hoge & Company, (Sec. 12, Sept. 16, 1895).....	10,906 41		
Mason, Hoge & Company, (Sec. 13, Sept. 16, 1895).....	5,678 75		
Smith & Eastman, (Sec. 14, Sept. 16, 1895) ..	18,989 25		
Wright, Meysenburg, Sinclair & Carry, (Sec. 15, Sept. 16, 1895).....	11,873 75		
Heldmaier & Neu, (Sec. A, Sept. 16, 1895) ..	2,733 63	\$26,291 56	\$ 6 13
Heldmaier & Neu, (Sec. B, Sept. 16, 1895) ..	8,835 75	9,126 00	918 00
Western Dredging & Improvement Co., (Sec. C, Sept. 16, 1895).....	6,065 93		
E. D. Smith & Co., (Sec. D, Sept. 16, 1895) ..	4,996 69		
Angus & Gindele, (Sec. E, Sept. 16, 1895) ..	2,835 00	5,130 00	
Weir, McKeckney & Co., (Sec. F, Sept. 16, 1895).....	7,743 75		
Gahan & Byrne, (Sec. G, Sept. 16, 1895) ..	6,166 90	9,113 16	
Gahan & Byrne, (Sec. H, Sept. 16, 1895) ..	9,384 18	6,442 35	
Christie & Lowe, (Sec. I, Sept. 16, 1895) ..	4,440 63		
Christie & Lowe, (Sec. K, Sept. 16, 1895) ..	11,156 25	1,825 00	
The Heidenreich Company, (Sec. L, Sept. 16, 1895).....	8,985 91	2,645 71	
The Heidenreich Company, (Sec. M, Sept. 16, 1895).....	1,860 77	2,604 00	
McMahon & Montgomery Co. et al. (Sec. O, Sept. 16, 1895).....	3,372 24	2,297 40	
Mason, Hoge & Co., (Sec. 7, Extra work—Dimension stone, rip-rap work, earth core and embankment, Sept. 16, 1895). ..	300 00		
T. A. Kearns, (Sec. 12, Extra work—Brigde trestle at Romeo roadway, Oct. 1, 1895— <i>final</i>).....	910 44		
Total.....		*\$262,106 33	
Grand total.....		<u>\$291,641 05</u>	

*Paid by warrants, with interest coupons, drawn against the tax levy of 1895.

Mr. Eckhart, seconded by Mr. Russell, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—Nine (9). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

REQUISITIONS.

The Clerk presented the following requisition:

No. 940, Police Department (coal and oil)..... \$391 20

Mr. Kelly, seconded by Mr. Bolden-

weck, moved that Requisition No. 940, for the Police Department, as read and shown above, be referred to the Joint Committee on Finance and Engineering.

The motion prevailed unanimously, and Requisition No. 940, for the Police Department, as read and shown above, was so referred.

MONTHLY REPORT FROM ENGINEERING DEPARTMENT.

The Clerk presented a report from the Engineering Department for the month of August, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, Sept. 23, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I herewith transmit the reports of the Divisions of Construction and Drafting and Designing, showing the detailed operations of the Engineering Department for the month of August, 1895; also a classified statement of expenses to Sept. 1st, 1895.

The expenses for the month of August, were as follows:

Salaries.....	\$ 16,133 27
Supplies, etc.....	1,418 32
Regular contractors' estimates.....	626,196 50
Extra contractors' estimates.....	685 60
Total.....	<u>\$ 644,433 69</u>

I estimate the expenses of this department for the month of September will be \$630,000.00.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

"CHICAGO, Sept. 27, 1895.

Isham Randolph, Esq., Chief Engineer:

DEAR SIR—I herewith submit my report of the work of construction during the month of August, giving the amount of work done during that month, and also the usual tabulated statements showing the progress and condition of the work on the 1st of September. While the value of the work done is very large (\$710,116.36), which is considerably in excess of the preceding month, and of the average contract requirements, many of the expensive sections are nearing completion, so that the current monthly charges against construction account will be gradually diminished in the future. The weather has continued favorable during the past month. And in this connection I am led to refer to the most remarkable and exceptionally

favorable weather, which has continued for the past three years throughout the entire work of construction, a condition which has not only rendered such unparalleled progress possible, but has saved hundreds of thousands of dollars in the prosecution of the work.

A summary of the work done during the month of August on the several sections shows results as follows:

On Section O all the work was done by teams and wheel scrapers near Western avenue amounting to 31,196 cubic yards. Considerable work was also done on force account in providing temporary roadways, rebuilding sidewalks, etc.

On the collateral channel dredge work was continued, a part of the excavated material being removed with scows to the amount of 19,462 cubic yards, and a part deposited upon the right of way which latter was not estimated.

On Section N but little work was done and this was by teams and wagons loaded by manual labor.

Sections M and L give a considerable increase over the preceding month, the output being 120,600 cubic yards. This material was moved with four steam shovels and inclines in 168 shifts, an average of 718 yards per shift. A large force of men and a few teams were employed in trimming and finishing the slopes.

Sections K and I continued operations in the usual manner with four steam shovels and truss conveyors whose output was 153,588 cubic yards in 185½ shifts, averaging 828 yards per shift; 17,412 cubic yards were also moved with teams and wheel scrapers, making the total yardage 171,000 for the month.

Sections H and G show a great improvement, the total output being equal to about 140 per cent of the monthly requirements.

On Section H the steam shovel and incline conveyor was operated 52½ shifts, averaging 828 yards per shift (43,459 cubic yards), and the Hoover & Mason conveyor moved 30,472 cubic yards in 52½ shifts, an average of 580 yards per shift. Four thousand nine hundred and eleven cubic yards were also moved by a small wheel scraper force, making the total output on Section H 73,842 cubic yards.

The work on *Section G* was continued with the usual plant and amounted to 54,701 cubic yards. The steam shovel and belt conveyor took out 26,593 cubic

yards in 51½ shifts, an average of 516 yards per shift. The steam shovel and incline conveyor were employed 50 shifts, taking out 28,103 cubic yards, being an average 562 yards per shift.

Section F is credited with an estimate of 29,500 cubic yards, which was hauled with two steam shovels and Christie & Lowe conveyors in 54 shifts, an average of 546 yards per shift. An accident to one of the conveyors delayed its operation for about ten days.

Section E—About 73,600 cubic yards were excavated during the month, of which 4,400 was taken out by teams and the balance, 69,200 cubic yards, with two steam shovels and a land dredge. The steam shovels worked 67 shifts, averaging 616 cubic yards each, and the land dredge was in use 40 shifts and averaged 700 yards per shift. On the 20th the land dredge was destroyed by fire, the loss of which will materially diminish the output until other plant can be substituted.

Section D continues operations with the plant and is credited with an output of 60,200 cubic yards. A force averaging ten men and five teams continued the work of trimming the slopes. The three steam shovels were employed 117 shifts, averaging a little over 514 yards per shift.

Section C returned an output of 49,700 cubic yards, of which 11,900 yards were handled with team and shovel forces, and the remaining 37,800 yards with three steam shovels which were employed 112½ shifts, averaging 336 yards per shift.

Section B gave an estimate of 55,700 cubic yards; 18,700 yards were taken out with team and shovel forces and 37,000 yards with three steam shovels which were employed 79½ shifts, averaging a little more than 465 yards per shift.

Section A. The rate of progress made on this section during the month has not fulfilled expectations. It seems, that notwithstanding the unfavorable conditions heretofore mentioned, ample time has been consumed to properly plant the work in time to accomplish something during seasonable weather, of which but about three months remain of this year. The total output for the month of August was 36,000 cubic yards, of which 19,500 yards were moved with team and shovel forces, and 16,500 yards with two steam shovels. The latter were engaged 59 shifts, averaging about 280 yards per shift.

Section 1 fell considerably short of its

previous month's work, which was in a measure occasioned by the changing of the appliances for handling rock. Two of the Cantilevers formerly in use on Section 10, have been obtained for use on this work and are now being put in place. The total output was 39,400 cubic yards, of which 19,600 yards were glacial drift that was moved by three steam shovels in 61½ shifts, an average of about 318 yards per shift. The balance, 19,800 yards, were solid rock which was taken out with three incline and car plants and one steam shovel. The steam shovel handled about 1,600 yards and the three inclines 18,200 yards in 97 shifts, an average of about 187 yards per shift.

Section 2 returned an estimate for the month of 60,000 cubic yards. Of this amount 22,900 yards were glacial drift and 37,100 solid rock. This output is nearly double the contract requirement, and leaves only about 126,000 yards remaining to be excavated, which could be taken out in about two months; but as considerable of the rock will be required for retaining walls, much of that which remains will be left over until next spring to finish the masonry work.

Section 3 continues to make excellent progress, being credited with a total of 58,000 cubic yards excavated and 2,700 cubic yards of retaining wall laid. Of the above quantity excavated, 10,800 yards was glacial drift and 47,200 yards was solid rock. There now remains but about 200,000 cubic yards in the section—about four months work—and the retaining walls are well along.

Section 4—The work of excavation on this section is also well nigh completed, but about 189,000 cubic yards remaining. The output for the month was 48,600 yards of glacial drift and 17,400 yards of solid rock; a total of 66,000 cubic yards.

Section 5 made a creditable record for the month, its output being 37,100 yards of glacial drift and 14,900 yards of solid rock; a total of 52,000 yards of excavation, leaving a balance of a little over 400,000 yards remaining in the section. Five thousand three hundred cubic yards of masonry were also laid.

Section 6 also made a good record, its estimate of material excavated amounting to 53,200 cubic yards, leaving a balance remaining in the channel of about 320,000 yards. Of the above quantity 28,300 yards was glacial drift and 24,900 solid rock. Five thousand eight hundred cubic yards of retaining wall was laid, and it is probable that all masonry work

on this section will be completed this fall.

Sections 7 to 14 inclusive all made excellent progress and are rapidly approaching completion far in advance of contract requirements.

Section 15 is also making satisfactory progress with the work of excavation, its output being 51,300 cubic yards of solid rock. The balance remaining in

the section is about 405,000 cubic yards.

The total value of the work done during the month (August) was \$710,116.36 and, with few the exceptions hereinbefore noted, the work is progressing finely.

Respectfully submitted,
(Signed) U. W. WESTON,

Supt. of Construction."

STATEMENT SHOWING AMOUNT OF WORK DONE DURING THE MONTH
OF AUGUST, 1895—(MAIN CHANNEL).

SECTIONS.	Amount Done During August.	Average Monthly Requirement.	Deficiency for August.	Excess Over Monthly Requirement.	Per Cent. of Monthly Requirement.
O.....	\$ 6,480 80	\$ 13,271 42	\$ 6,790 62	.....	49.
N.....	.....	10,674 33	10,674 33	.....	00.
M.....	7 334 60	6,274 34	.....	\$ 1,060 26	117.
L.....	17,099 60	8 682 82	.....	8,416 78	197.
K.....	21,600 00	11,559 57	.....	10 040 43	187.
I.....	21,150 00	11 398 49	.....	9,751 51	186.
H.....	22 864 18	12,493 57	.....	10,370 61	183.
G.....	15,316 28	15,277 64	.....	38 64	100.
F.....	8,702 50	13 493 77	4,791 27	.....	64.
E.....	19,872 00	23,230 53	3,358 53	.....	86.
D.....	15,915 38	19,215 65	3,300 27	.....	83.
C.....	11,679 50	13,443 10	1,763 60	.....	87.
B.....	15,036 84	12,901 32	.....	2,135 52	117.
A.....	11,033 58	24,012 30	12 978 72	.....	46.
1.....	24,248 40	44 801 03	20,552 63	.....	54.
2.....	41,130 00	20 950 88	.....	20,179 12	196.
3.....	50 695 00	29,177 70	.....	21,517 30	174.
4.....	37,734 00	22 982 67	.....	14,751 33	164.
5.....	39,477 50	18 387 51	.....	21,289 99	215.
6.....	44,981 50	26,827 41	.....	18,154 09	168.
7.....	33 396 50	25 622 15	.....	7 774 35	130.
8.....	29 110 25	21 799 22	.....	7,311 03	134.
9.....	35,220 20	19,325 00	.....	15,895 20	182.
10.....	26,400 00	22,453 34	.....	3 941 66	118.
11.....	36,613 50	19 455 05	.....	17,158 45	188.
12.....	31,865 50	20,413 93	.....	11,451 57	156.
13.....	6,406 75	21,140 02	14,733 27	.....	30.
14.....	48,285 00	22 648 61	.....	25,636 39	213.
15.....	30,267 00	23,607 65	.....	6,659 35	128.
Totals.....	\$710,116 36	\$555,526 02	\$ 78,943 24	\$233,533 58	127.83

SION) AND CONDITION OF WORK ON CONTRACTS, SEPT. 1ST, 1895.

Total value of work done to Sept. 1st, 1895, on each section.	Total value of work required to be done to Sept. 1st, 1895.	Amounts behind as per contracts.	Amounts ahead as per contracts.	Average monthly progress called for in contracts.	Average monthly progress necessary to finish by Sept. 1st, 1895, to the time of completion.	Progress made during month of August, 1895.
\$ 127,653 41	\$ 229,856 00	\$ 102 202 59	.....	\$14,366 00	\$ 22,841 19	\$ 6,480 80
20 884 00	170,789 28	149,905 28	.....	10,674 33	23,861 19	.....
129,700 90	106 693 78	.....	\$ 23,037 12	6,274 34	4,128 43	7,331 60
189,060 90	147,607 94	.....	41,452 96	8 682 82	6 004 19	17 099 60
209,875 00	196,512 69	.....	13 362 31	11,559 57	11,731 43	21,600 00
273,175 00	193,774 13	.....	79,400 87	11,398 49	5 061 60	21,150 00
104,989 57	212,390 69	107,401 12	.....	12 493 57	24,985 85	22,864 18
224,693 28	259,719 88	35 026 60	.....	15,277 64	18,749 39	15,316 28
182,631 66	238,312 78	55,681 12	.....	13,493 77	15,434 52	8,702 50
248,951 28	410 878 11	161,926 83	.....	23 230 53	39,921 05	19,872 00
400 528 13	499,606 90	99,078 77	.....	19,215 65	29 540 95	15,915 38
314,080 50	382 088 46	68 057 96	.....	14,695 71	22,031 33	11,679 50
327,588 30	380,577 08	52 988 78	.....	14,637 58	20 879 94	15 036 84
335,216 66	655 274 10	320 057 44	.....	25,202 85	57,128 97	11,033 58
*350,789 96	706 830 11	356 040 15	.....	44,801 03	74,652 70	24 248 40
570 345 98	655,726 26	85,380 28	.....	21,152 46	31,405 39	41,130 00
661,525 70	632,525 40	.....	29,000 30	29,177 70	30,312 19	50,695 00
599,373 00	785 445 44	135 072 44	.....	22,982 67	37 584 95	37,734 00
393,228 00	579,206 57	185,978 57	.....	18,387 51	37,866 87	39,677 50
451,869 50	513 940 28	62,070 78	.....	26,896 13	35,435 40	44,981 50
596,012 00	578,150 22	.....	17,861 78	25,699 42	25,710 70	33,396 50
815,938 50	791,307 99	.....	24 630 51	23,979 03	23 247 48	29,110 25
776,911 70	656,707 59	.....	120,204 11	19,900 23	11 328 29	35,220 20
967,750 00	784 748 25	.....	183 001 75	23,780 25	6,364 08	26,400 00
717,123 15	650 742 51	.....	66,380 64	19,719 47	16 048 13	36,613 50
768 640 95	676 517 82	.....	92,123 13	20,500 54	13,502 66	31,865 50
793,304 97	697,620 66	.....	95,684 31	21,140 02	8,976 03	6,406 75
681 379 00	747,404 13	66 025 13	.....	22 648 61	34 732 92	48,285 00
147,378 00	259,684 15	112 306 15	.....	23,607 65	34,647 27	30,267 00
\$12,380,549 00	\$13,750,609 20	\$2,156,199 99	\$786,139 79	\$565,575 57	\$724,565 04	\$710,116 36

channel.....	Cubic Yards.
.....	16,530 641
.....	8,992,800
.....	1,145 550
.....	222,683
.....	60,423.44
.....	\$13,750,609 20
.....	12,380,549 00
.....	\$1,370,060 20
.....	\$12 380,549 00
.....	\$1,532,173 32
.....	94 414 46
.....	1,625,587 78
.....	\$10,753,961 22
September 1st, 1895.....	+647,924 27
.....	\$11,401,885 49

†Overhaul to Levee—Section 1 included.

SANITARY DISTRICT OF CHICAGO—ENGINEERING DEPARTMENT.

CLASSIFIED STATEMENT OF EXPENDITURES DURING THE MONTH OF AUGUST, 1895.

CLASSIFICATION.	Eng. Expenses.		Construction.		Total for Month.		Previously Reported.		Total to Date.	
	Salaries.	Supplies, Etc.	Regular.	Extra.	Eng. Expenses.	Construction.	Eng. Expenses.	Construction.	Eng. Expenses.	Construction.
Preliminary Sundries.....							\$ 120,633 75		\$ 120,633 75	
Locating Route.....							32,222 94		32,222 94	
Borings and Test Pits.....							16,266 50		16,266 50	
Maps, Plans and Specifications.....	\$ 607 50	8 64			\$ 616 14		35,980 20		35,980 34	
Chicago River Survey.....							17,082 66		17,082 66	
Survey of street lines adjacent to Chi. River.							7,476 32		7,476 32	
Right of Way.....	452 00	8 67			460 67		19,883 80		20,344 56	
Flood Measurements.....	253 00	51 20			304 20		16,384 01		16,088 91	
Disposal of Floods at Joliet.....	200 00				200 00		23,418 00		22,708 00	
Regular Construction.....	11,450 37	427 98	\$ 626,196 50		11,878 36	\$ 626,196 50	283,219 58	\$ 10,147,510 30	295,097 94	\$ 10,173,715 60
Extra Work—Main Channel.....							13,453 51		13,453 51	
Extra Work—River Diversion.....							333,707 41		3,643 51	
Diversion North Branch Chicago River.....							813 75	181,457 00	813 75	181,457 00
Levees, Trestles and Embankments.....							1,754 91	20,518 41	1,754 91	20,518 41
Spillway.....							5,246 04		5,246 04	
Tow Path.....							1,157 05	19,029 05	1,157 05	19,029 05
Building Western Stone Company's Bridge.....							985 66	22,329 89	985 66	22,329 89
Building Stephens Street Bridge.....							770 72	18,738 80	770 72	18,738 80
Building Atchison, Topeka & Santa Fe Bridge.....							32 17		32 17	
Building Mt. Forest Foot Bridge.....							1,050 13	7,756 19	1,050 13	7,756 19
Repairing and Moving Bridges.....							2,339 43		2,339 43	
Office Building at Sag.....							4,879 02	781 63	5,756 55	781 63
Saving of Building Sand.....	849 90	27 63			877 53		1,496 75	9,668 00	1,496 75	10,068 00
Mortar, Sand and Cement Tests.....							237 60		237 60	
Saving of Dimension Stone.....							2,702 04		2,964 28	
Erosion Test.....							1,138 14		1,138 14	
Temporary Sanitary Relief.....							2,479 10		3,973 70	
Photographs of Works.....	210 00	52 24			262 24		585 38		698 50	
Public Reports.....							175 00		698 50	
Remasurement of Main Channel.....	712 00	781 60			1,493 60		68,992 71		69,715 06	
Effect of Main Channel water on Lake Levels.....	95 00	18 00			113 00					
Improvement South Branch Chicago River.....	473 50				473 50					
General Account.....	740 00	42 35			782 35					
Totals.....	\$16,133 27	\$ 1,418 32	\$ 626,196 50	\$ 685 60	\$17,551 59	\$ 626,882 10	\$ 681,070 47	\$ 10,774,961 79	\$ 698,622 00	\$ 11,401,843 89

“CHICAGO, Sept. 17, 1895.

Isham Randolph, Esq., Chief Engineer.

DEAR SIR—The work of the Division of Drafting and Designing for the month of August was as follows:

The work of re-surveying the work of construction was continued under the direction of Mr. Seymour.

The general surveys and incidental right of way surveys were continued, including surveys at Joliet, vicinity of South Fork of Chicago River and on North Branch of Chicago River.

The preparation of plans for Regulating Works and for improvement of the South Branch of Chicago River were continued.

Miscellaneous hydraulic data pertaining to the Desplaines and Illinois Rivers were collated and put into shape for reference.

The testing of cement for use in retaining walls was continued, as was also the work of preparing record photographs and the maintenance of water gauges.

The following plans were finished: A map of a proposed crossing of Western Avenue and the Southwest Boulevard; profiles of the Chicago, Rock Island & Pacific Railroad from Utica to Tiskilwa and Bureau Junction to Putnam; profiles of the Niagara, Detroit and St. Clair Rivers and Lake St. Clair; profiles of the proposed grade of the Pan Handle Rail-

road across the right of way of the Sanitary District, and the Chicago, Madison & Northern Railroad from the Pan Handle Railroad to the crossing of the Illinois and Michigan Canal; profiles, in Lockport, of State street and the Chicago & Alton Railroad; cross-section of a concrete retaining wall; a tracing of a map of Manchester showing proposed location of Thirty first street; a right of way map of Sag Island and a contour map of the Desplaines Valley from Flag Creek to the west end of Sag Island.

Prepared two maps of the channel from Chicago to Joliet and two maps of the Sanitary District.

Collected information at the City Hall in regard to new sewerage districts and changes in the old districts.

Work was continued on the tracings of the Chicago River survey; the progress profiles of the Main Channel and retaining walls; a contour map of the valley between Lockport and Joliet; a large scale contour map in Lockport; a set of excavation tables; estimates of work in the Desplaines and Illinois Rivers, and a map of the lower Illinois River.

Commenced platting the additional sewerage notes on the maps.

Expenses for September will be approximately the same as for August.

Respectfully,

Signed)

THOS. T. JOHNSTON,
Assistant Chief Engineer.”

MONTHLY REPORT FROM LAW DEPARTMENT.

The Clerk presented a report from the Law Department for the month of September, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, Oct. 9, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I submit herewith the monthly report for September, 1895.

The total amount paid out by this Department during the month is as follows:

SALARIES.

Attorneys.....	\$1,366 65	
Office force.....	255 00	
		\$1,621 65

GENERAL EXPENSES.

Court costs.	\$ 15 55	
Right of way.....	425 00	
Expense account...	56 25	
Legal services.....	2,716 85	
Printing and stationery	24 85	
		\$3,238 50

LAND ACCOUNT.

Right of way (for which deeds have passed)	5,250 00	
Total.....	\$10,110 15	

An agreement was reached with Carl Moll for the undivided half of the land on Sag Island, lying west of the Bracken Bank on the same terms that had been made with Mr. Lomax. Pursuant to this agreement a verdict and order of judgment was entered in the Circuit Court of Will County. The agreement made required the delivery to the District of quit claim deeds for this portion of Sag Island and also for that portion included in the previous condemnation suit. The matter has not yet been finally closed by reason of an alleged misunderstanding as to the latter portion of said agreement.

The legal questions involved in the matter of the issue by the District of warrants against the tax levy of 1895 have

received much attention from this department.

Preparation is making for the trial of the suits in which the District is interested and which appear upon the calendars made up during vacation for the different courts.

Respectfully submitted,

(Signed) GEO. E. DAWSON,

Attorney."

MONTHLY REPORT FROM TREASURY DEPARTMENT.

The Clerk presented a report from the Treasury Department for the month of September, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT :

"Balance on hand at date of last report.....	\$1,346,103 73
Received from County Treasurer, Sanitary District Tax Account. \$100,000.00	
Received from Thos. F. Judge, Clerk, General Account (stone taken from right of way without authority)....	10.00
Received from Ft. Dearborn National Bank, interest for September	377.15
Received from Metropolitan National Bank, interest for September	387.06
Received from Chicago National Bank, interest for September....	387.29
Received from National Bank of Illinois, interest for September ...	400.54
Received from American Trust and Savings Bank, interest for September	34.51
Received from Globe National Bank, interest for September....	328.79
Total cash received for month.....	\$ 101,925.34
Total cash disbursed during month as per annexed schedules, viz:	\$1,448,029.12
Clerical Department....	\$ 938.97
Treasury Department..	166.67
Engineering Departm't.	17,265.07
Engineering—Construction Department.....	309,714.42
Law Department.....	4,831.20
Law Department—Land Account.	5,250.00

General Account.....\$	3,971.55	
Police Department.....	4,206.89	
		<u>\$346,344.77</u>

Balance this date, in banks as per schedule endorsed hereon		<u>\$1,101,684.35</u>
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(Signed) MELVILLE E. STONE,
Treasurer.

CHICAGO, September 30, 1895."

SCHEDULE:

Metropolitan National Bank.....	\$203,859.95
American Trust and Savings Bank.....	21,003.79
Fort Dearborn National Bank.....	201,122.08
Chicago National Bank.....	200,638.08
National Bank of Illinois.....	201,962.61
Globe National Bank.....	273,097.84
Total.....	<u>\$1,101,684.35</u>

PURCHASE OF "LAY" LAND.

Mr. Eckhart, Chairman, presented a report from the Joint Committee on Finance and Engineering, with reference to the purchase from George W. Lay of certain right of way lands in Cook County, and authorizing and directing the Clerk to pay for the said right of way lands, on the voucher of the Attorney, as provided in the report; and the report was read.

Mr. Eckhart, seconded by Mr. Kelly, moved that the report be adopted, ordered printed and placed on file, the recommendations made therein concurred in, and the Clerk authorized and directed to pay George W. Lay, on the voucher of the Attorney, for said right of way lands, as provided in the report.

On roll call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—Nine (9). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, the recommendations made therein concurred in, and the Clerk authorized and directed to pay George W. Lay, on the voucher of the Attorney, for the said right of way lands, as provided in the report.

The following is

THE REPORT:

"CHICAGO, October 9th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The Joint Committee on Finance and Engineering has reached an agreement with George W. Lay for the purchase from him, for the corporate purposes of this District, of the land

hereinafter described for the sum of twenty thousand (\$20,000) dollars.

Your Committee recommend that the Clerk of this District be authorized and directed to pay, on the voucher of the Attorney, to George W. Lay, the sum of twenty thousand (\$20,000) dollars, said sum to be in full payment and satisfaction for the following described real estate, to-wit.:

Beginning at a point two hundred and eighty-three (283) feet north of the south line of Section twenty-five (25), Township thirty-nine (39) North, Range thirteen (13) East of the Third Principal Meridian and thirty-three (33) feet west of the east line of said Section twenty-five (25), and running thence west five hundred and forty-six and sixty-six one hundredths (546.66) feet on a line parallel with the south line of said section to the east line of land conveyed by George W. Lay to the Union Stock Yard and Transit Company; thence north along said east line to a point five hundred and fifty-one and seven one hundredths (551.07) feet north of said south line of said section; thence east on a line parallel with the south line of said section to a point thirty-three (33) feet west of the east line of said section; thence south two hundred and sixty-eight and seven one hundredths (268.07) feet to the point of beginning, containing three and thirty-six one hundredths (3.36) acres, more or less.

Said land being situated in the City of Chicago, in the County of Cook and State of Illinois.

As part of the consideration for said land the District is to permit the use of a strip fifty two (52) feet in width along the west side of said premises and another strip fifty-two (52) feet in width along the north side of said premises to be used hereafter as a public street or highway. The Sanitary District to grade said strip as a roadway and cover the same to a width of twenty (20) feet and a depth of six (6) inches with broken stone or cinders, and in addition to remove the building or buildings now situated on said property to adjoining land.

Respectfully submitted,

(Signed)

B. A. ECKHART,

Chairman.

THOMAS KELLY,

W. H. RUSSELL,

WM. BOLDENWECK,

JOHN J. ALTPETER,

L. E. COOLEY,

Joint Committee on Finance and Engineering."

INVITATION TO ATTEND WESTERN WATERWAYS CONVENTION AT VICKSBURG, AND APPOINTMENT OF DELEGATE THERETO.

The Clerk presented a communication from J. A. Conway, Chairman of the Executive Committee of the Vicksburg Board of Trade for the Western Waterways Convention, inviting the Board to appoint delegates to said Convention, to be held at Vicksburg, Miss., on October 22 and 23, 1895; and the communication was read.

The Clerk also presented a communication from Frank A. Flower, Secretary of the International Deep Waterways Association, urging the Board to send delegates to the Vicksburg convention; and the communication was read.

In connection with the same matter, Mr. Boldenweck presented a resolution providing for the sending of an exhibit and the appointment of delegate to said convention; and the resolution was read.

Mr. Boldenweck, seconded by Mr. Eckhart, moved that the communications be ordered printed and placed on file, and the resolution adopted.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Gilmore, Kelly, Prendergast, Russell and Wenter—Nine (9). Nays—None.

Upon which result the President declared the motion carried, the communications ordered printed and placed on file, and the resolution adopted.

The following are

THE COMMUNICATIONS:

"OFFICE OF EXECUTIVE COMMITTEE }
of the Vicksburg Board of Trade for
the Western Waterways Convention, }
VICKSBURG, Miss., Sept. 24, 1895."

Board of Trustees of the Sanitary District of Chicago, Chicago, Illinois:

GENTLEMEN—I enclose you a copy of the call for the Western Waterways Convention to assemble in this city on October 22d and 23d next, beginning at eleven o'clock, A. M., and I cordially invite the attendance of your Board. The matter of the improvement of our western waterways is of such profound importance to about twenty million of our people that I am satisfied you will take a deep interest in the matter.

The construction of the Sanitary and Ship Canal of Chicago should institute a community of interest between us, and I earnestly hope that your Board will

think well enough of this matter to appoint delegates to attend our Convention.

The season of the year has been selected as being particularly pleasant in this section, and we look for a very largely attended and successful Convention.

Hoping to have a favorable reply from your Board, I am,

Yours very truly,

(Signed) J. A. CONWAY,
For Executive Committee."

"THE INTERNATIONAL
DEEP WATERWAYS ASSOCIATION, }
CLEVELAND, O., Oct. 2, 1895."

DEAR SIR—I beg that you will not consider it an imprudence if I call your attention to the desirability of having the Trustees of the Sanitary District represented at the Vicksburg Convention.

While at present your vast enterprise takes on something of a local aspect, it will, before it can be opened up and put to use, involve national, if not international authority; and when it comes to that, you will need all the influence, sympathy and votes to be had.

It is unnecessary, therefore, to proceed farther to indicate to you the extreme desirability of securing new friends and allies at the Vicksburg Convention.

Very respectfully yours,

(Signed) FRANK A. FLOWER,
Secretary.

*Board of Trustees, Sanitary District,
Thomas F. Judge, Clerk, Chicago, Ill."*

The following is

THE RESOLUTION;

"Resolved, That the Chief Engineer be and he is hereby directed to send a suitable exhibit, in charge of a member of his staff, to the Convention on the improvement of Western Waterways, to be held at Vicksburg, Mississippi, on October 22 and 23, 1895, and that Lyman E. Cooley, Chairman of the Committee on Engineering, be authorized to represent this Board at said Convention."

CLAIM FOR DAMAGES FROM WORK ON
WESTERN AVENUE MAIN CHANNEL CROSSING.

The Clerk presented a communication from Wm. E. Mason, being claim for

damages arising from the work being done by the District with reference to the Main Channel crossing at Western avenue; and the communication was read.

Mr. Boldenweck, seconded by Mr. Eckhart, moved that the communication be ordered printed and referred to the Committee on Judiciary.

The motion prevailed unanimously, and the communication was ordered printed and so referred.

The following is

THE COMMUNICATION:

"CHICAGO, Ill., Oct. 1, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I am a part owner of property known as the Flaherty Tract,

fronting on Western Avenue, a part of which was condemned by your Board for the canal.

You are now tearing up the streets, sidewalks and curbing outside of your line and this is to request you to see that our property is kept intact and that the owners of the property will hold the Trustees for damages to our property.

Very respectfully yours,

(Signed)

WM. E. MASON."

ADJOURNMENT.

On motion of Mr. Kelly, seconded by Mr. Gilmore, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

October 9,]

—2875—

[1895.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

OCTOBER 16, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and eighty-fourth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto building, Wednesday, October 16, 1895, at 2 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7), and consequently Mr. Gilmore, making a total of eight (8) members, were present.

MINUTES.

The minutes of the regular meetings held September 25 and October 2 and 9, 1895, were approved as printed, on motion of Mr. Kelly, seconded by Mr. Russell.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

P. F. Pettibone & Co., (stationery).....	\$ 24 50
A. C. McClurg & Co., (stationery)	1 76
Chicago Blue Print Paper Co., (paper) ..	4 80
Keuffel & Esser Co., (drafting supplies)	16 98
Keuffel & Esser Co., (drafting supplies)	10 37

Eugene Dietzgen Company (drafting supplies).....	\$ 9 36	
W. A. Olmsted, (mounting maps).....	22 10	
F. Mayer & Co., (blue prints).....	49 82	
Paul Pouliot, (row boat).....	20 00	
Hibbard, Spencer, Bartlett & Co. (hardware).....	1 30	
E. De Clark & Co., (iron pans).....	3 00	
New York Aristotype Co., (photo supplies).....	3 00	
Seelig & Kandler, (repairing instruments)	7 00	
Henry Gebhardt, (repairing, etc.).....	6 96	
Frank S. Amick, Agent, (rent—Corwith, September, 1895)	15 00	
John McCaffery, (rent—Brighton Park, September, 1895).....	25 00	
J. M. Abbitt, (rent—Willow Springs, September, 1895).....	20 00	
H. S. Norton, (rent—Lemont, September, 1895).....	18 00	
O. W. Moon, (rent—Lockport, September, 1895).....	20 00	
Mary Rusk, (gauge reading, Sept., 1895).....	10 00	
E. Hastings, (gauge reading, Sept., 1895).....	10 00	
Wm. Kirkham, (gauge reading, Sept., 1895).....	10 00	
Wm. McGinnis, (gauge reading, Sept., 1895).....	10 00	
Joseph Carlin, (gauge reading, Sept., 1895).....	10 00	
Chicago Towel Supply Co., (toweling)...	5 40	
C. S. Austin, (ice).....	12 00	
Waukesha Hygeia Mineral Springs Company, (water).....	7 50	
Thos. T. Johnston, (traveling and expense).....	23 13	
Wm. Trinkaus, (traveling and expense).....	26 73	
E. R. Shnable, (traveling and expense).....	28 58	
H. B. Alexander, (traveling and expense).....	20 90	
H. A. Miller, (traveling and expense)....	49 21	
W. T. Keating, (traveling and expense).....	13 55	
		\$ 515 95

CLERICAL DEPARTMENT.

C. S. Austin, (ice).....	3 00
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GENERAL ACCOUNT.

John F. Higgins, (printing Proceedings, etc., September, 1895).....	108 53	
Thos. T. Johnston, (expense—Cleveland Deep Waterways Convention).....	307 96	
B. A. Eckhart, (expense—New York trip)	138 25	
Chas. C. Sperry, M. D., (professional services).....	25 00	
Wm. Martin, (traveling).....	26 00	
		\$ 605 74

POLICE DEPARTMENT.

Wagner Bros., (livery).....	\$ 10 50	
Bohanon Carriage Co., (repairing carriages)	28 55	
C. F. G. Stender, (repairing harness)....	17 45	
McArthur Brothers Co., (horse shoeing, etc.)	17 47	
Daniel E. Tracy, (horse shoeing).....	8 70	
M. H. McKillip, M. D., (professional veterinary services)	11 50	
		\$ 94 17
Grand total.....		<u>\$1,218 86</u>

Mr. Boldenweck, seconded by Mr. Kelly, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly (*except as to vouchers for Mary Rusk, E. Hastings, Wm. Kirkham, Wm. McGinnis and Joseph Carlin, \$10.00 each, for gauge reading*), Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

REQUISITIONS.

The Clerk presented the following requisition:

No. 524, Engineering Department
(sundry supplies)..... \$247 57

Mr. Kelly, seconded by Mr. Boldenweck, moved that Requisition No. 524, for the Engineering Department, as read and shown above, be allowed.

On roll call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and Requisition No. 524, for the Engineering Department, as read and shown above, allowed.

MONTHLY REPORT FROM CLERICAL DEPARTMENT.

The Clerk presented a report from the Clerical Department for the month of September, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, October 16. 1895.

To the Honorable the Board of Trustees
of the Sanitary District of Chicago:

GENTLEMEN—I have the honor to

herewith report that the total amount expended on account of and charged to the Clerical Department during the month of September, 1895, was \$938.97, divided as follows:

Salaries	\$891 67
Stationery	38 55
General expenses.....	8 75

Total..... \$938 97

There are no outstanding liabilities, and the expenses for the present month will, from present indications, be about \$950.

The total amount expended and charged to the General Account during the month of September, 1895, was \$4,154.66, divided as follows:

Salaries.....	\$2 817 08
Printing.....	157 68
Tablet and exercises, Section 10..	780 00
General expenses.....	399 90

Total..... \$4,154 66

There are no outstanding liabilities against the General Account, and the expenses for the present month will be about \$6,000.

During the month of September, 1895, there were warrants authorized and drawn against the various accounts for \$339,578.11, as follows:

Engineering Department.....	\$ 17,176 42
Clerical Department.....	938 97
Law Department.....	4,860 15
Treasury Department.....	166 67

General Account.....	\$4,154 66
Engineering Department (Construction Account).....	297,595 77
Law Department (Land Account).....	10,500 00
Police Department.....	4,185 47
Total.....	<u>\$389 578 11</u>

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

RESIGNATION OF ASSISTANT ENGINEER
MILLER AND ASSIGNMENT OF AS-
SISTANT ENGINEER HARRISON.

The Clerk presented a report from the Chief Engineer, advising the Board of the resignation of Assistant Engineer H. A. Miller, in charge of the Lemont Division, and of the assignment of Assistant Engineer C. L. Harrison to the charge of said Division, in addition to the Lockport Division; and the report was read.

Mr. Kelly, seconded by Mr. Boldenweck, moved that the report be ordered printed and placed on file, the resignation of Assistant Engineer Miller accepted, and the action of the Chief Engineer, as set forth in the report, approved.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT:

"CHICAGO, Oct. 16, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—I have to report the resignation of Assistant Engineer H. A. Miller, who has accepted employment with the Metropolitan Water Supply Company of Boston.

Mr. Miller has shown marked ability, indefatigable industry and unswerving loyalty to the best interests of this District under very trying circumstances, and his selection for another important trust, at an advanced salary, is a fitting recognition of his worth.

After carefully considering the condition of the work on Mr. Miller's division with a view to its efficient administration, I have decided that it is best to hold that organization together for the present, and with your approval of my decision, I will place it in charge of Assistant Engineer C. L. Harrison, in

addition to his present charge of the Lockport Division.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

ADDITIONAL EXPENDITURE FOR MOVING OF WESTERN STONE CO. TRACK FROM SECTION 9, AND APPROPRIATION FOR NORTH APPROACH TO TEMPORARY BRIDGE TRESTLE AT ROMEO ROADWAY.

The Clerk presented a report from the Chief Engineer, asking approval for an expenditure of \$32.44, in addition to appropriation for \$600 granted at the meeting held June 25, 1895 (page 2689 of the proceedings), for the moving of the Western Stone Co. trestle on Section 9, as set forth in the report; and also for the appropriation of \$50 for work on the north approach to the temporary bridge trestle at Romeo roadway crossing, as set forth in the report; and the report was read.

Mr. Boldenweck, seconded by Mr. Kelly, moved that the report be ordered printed and placed on file, and the additional expenditure and appropriation as requested therein approved and granted.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed and placed on file, and the additional expenditure and appropriation, as requested therein, approved and granted.

The following is

THE REPORT:

"CHICAGO, Oct. 16th, 1895.

*To the Honorable the Board of Trustees of
the Sanitary District of Chicago:*

GENTLEMEN—When I reported voucher for the Western Stone Company's trestle as final there was an outstanding freight bill on lumber of which I had no knowledge.

The bill amounts to \$17.30 and brings the total cost of this change in trestle up to \$632.44 or \$32.44 in excess of the authorization on my estimate of June 25th, (page 2689 of Proceedings.)

I have, therefore, to ask your approval of the increased expenditure. In this connection, I would call attention to the

saving effected in the construction of the Romeo and Lemont trestles by the use of hemlock lumber.

The estimate for each trestle with authorized appropriation was \$1,100.00; the Romeo trestle cost \$910.44 and the Lemont trestle \$966.37.

At Romeo some additional work will be necessary to make the north approach safe, and probably \$50.00 will have to be expended for this purpose for which expenditure I now ask your approval.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

REPORT ON SALE OF BORING OUTFIT.

The Clerk presented a report from the Chief Engineer with reference to check (\$115) received from Meyer & Soffel, in payment for boring outfit owned by the District and sold to said firm, as set forth in the report; and the report was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the report be ordered printed and placed on file, the action of the Chief Engineer in making said sale approved, and the Clerk directed to deposit said check (\$115) with the Treasurer, to the credit of the District and the Engineering Department Account thereof.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT:

"CHICAGO, Oct. 16th, 1895.

Thos. F. Judge, Esq., Clerk:

DEAR SIR—The check of \$115.00 payable to your order given me by Meyer & Soffel of Maywood and turned over to you on the 9th inst., was in payment for the boring outfit belonging to this District which I sold to these parties, for the sum named, after consultation with the members of the Finance and Engineering Committee.

Yours truly,

ISHAM RANDOLPH,
Chief Engineer."

(Enclosing check—\$115.)

REPORT ON REMEASUREMENT OF MAIN CHANNEL.

The Clerk presented a report from the Chief Engineer with reference to and en-

closing comparative table and report from R. B. Seymour, Special Engineer in charge of the remeasurement of the Main Channel, ordered by the Board at the meeting held June 12, 1895 (page 2670 of the proceedings); and the report and enclosures were read.

Mr. Boldenweck, seconded by Mr. Russell, moved that the report and enclosures be ordered printed and placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT, WITH ENCLOSURES:

"CHICAGO, October 18th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I submit herewith the results of the remeasurement of the Main Channel of this District as reported to me by R. B. Seymour, under whose directions the remeasurements and computations were made.

This remeasurement was recommended by me April 17th last (see page 2614 of proceedings), and was ordered by you June 12th following (see page 2670 of proceedings).

Mr. Seymour's report makes no comparison with previous estimates, but is confined to the work done by him. I therefore submit tabulations comparing his estimates with those reported by the Assistant Engineers December 21st, 1895.

In addition to these tables I also submit a statement showing the percentage of variation in the volume of excavation on each section as follows:

Section O—Increase of 6,639 cu. yds., or .41 of 1 per cent.

Section N—Reduction of 2,435 cu. yds., or .22 of 1 per cent.

Section M—Reduction of 8,115 cu. yds., or 1.13 per cent.

Section L—Reduction of 14,132 cu. yds., or 1.29 per cent.

Section K—Reduction of 7,824 cu. yds., or .68 of 1 per cent.

Section I—Reduction of 5,141 cu. yds., or .45 of 1 per cent.

Section H—Increase of 5,716 cu. yds., or .53 of 1 per cent.

Section G—Reduction of 8,446 cu. yds., or .62 of 1 per cent.

Section F—Reduction of 13,588 cu. yds., or 1.23 per cent.

Section E—Reduction of 13,481 cu. yds., or .71 of 1 per cent.

Section D—Increase of 3,508 cu. yds., or .34 of 1 per cent.

Section C—Increase of 4,651 cu. yds., or .25 of 1 per cent.

Section B—Reduction of 18,917 cu. yds., or 1.2 per cent.

Section A—Reduction of 86,638 cu. yds., or 3.36 per cent.

Section 1—Increase of 106,210 cu. yds. See note.

Section 2—Reduction of 9,337 cu. yds., or .77 of 1 per cent.

Section 3—Reduction of 8,459 cu. yds., or .71 of 1 per cent.

Section 4—Reduction of 20,129 cu. yds., or 1.5 per cent.

Section 5—Reduction of 25,034 cu. yds., or 1.83 per cent.

Section 6—Reduction of 6,923 cu. yds., or .56 of 1 per cent.

Section 7—Reduction of 14,224 cu. yds., or 1.32 per cent.

Section 8—Increase of 4,751 cu. yds., or .39 of 1 per cent.

Section 9—Increase of 3,947 cu. yds., or .36 of 1 per cent.

Section 10—Increase of 799 cu. yds., or .07 of 1 per cent.

Section 11—Reduction of 4,923 cu. yds., or .05 of 1 per cent.

Section 12—Increase of 961 cu. yds., or .09 of 1 per cent.

Section 13—Reduction of 9,214 cu. yds., or .85 of 1 per cent.

Section 14—Increase of 4,441 cu. yds., or .32 of 1 per cent.

Section 15—Increase of 385 cu. yds., or .06 of 1 per cent.

Note—There is an apparent increase on eleven of the sections of 142,008, and a reduction on seventeen sections of 278,772 cubic yards. But of the apparent increase 106,210 cubic yards appears on Section 1, as compared with the Engineer's report of December 31st, 1894. On February 4th, 1895, however, the Assistant Engineer in charge of the Willow Springs Division advised me that he found he had omitted from his estimate for that section 109,540 cubic yards excavated by Alfred Harlev prior to its relletting to Griffiths & McDermott. Correcting his estimate up to February 4th, we should have $1,709,775 + 109,540 = 1,819,315$ versus 1,815,985 cubic yards returned by Mr. Seymour, or a reduction of 3,330 cubic yards, or .18 of 1 per cent.

I have made these percentages on the total excavation because there was no idea on my part from the first (see my letter of April 17th last, page 2614 of proceedings) that the quantities of classified material would agree, for the simple reason that the dividing planes between them were not clearly established at the time the estimates of December 31st were made, and it was a foregone conclusion that while the totals would remain the same, the respective volumes covered by the two classifications would vary, as the facts developed.

The results of this remeasurement have confirmed the accuracy of the work heretofore done to a degree which is very gratifying to me.

(Signed)

ISHAM RANDOLPH,

Chief Engineer."

ENCLOSURES :

*Comparison of the Estimates of December 31st, 1894, with the Estimates of Remeasurement Returned by
R. B. Seymour, September 30th, 1895—Main Channel Only.*

Section.	CLASSIFICATION.	Estimates.		Comparative Exhibit.	
		Dec. 31, 1894 Cu. Yds.	Sept. 30, 1895 Cu. Yds.	Increase Cu. Yds.	Reduction Cu. Yds.
O	Glacial Drift.....	1,504,734	1,512,182	7,448	.....
O	Collateral Channel.....	132,009	131,300	.....	809
		1,636,743	1,643,382	6,639	.....
N	Glacial Drift.....	1,105,443	1,103,008	.....	2,435
M	Glacial Drift.....	717,650	709,535	.....	8,115
L	Glacial Drift.....	1,094,081	1,079,949	.....	14,132
K	Glacial Drift.....	1,147,757	1,139,933	.....	7,824
I	Glacial Drift.....	1,131,649	1,126,508	.....	5,141
H	Glacial Drift.....	1,073,579	1,079,295	5,716	.....
G	Glacial Drift.....	1,356,401	1,347,955	.....	8,446
F	Glacial Drift.....	1,091,353	1,078,339	.....	13,014
F	Solid Rock.....	16,724	16,150	.....	574
		1,108,077	1,094,489	.....	13,588
E	Glacial Drift.....	1,108,670	1,799,123	.....	9,547
E	Solid Rock.....	78,765	74,831	.....	3,934
		1,887,435	1,873,954	.....	13,481
D	Glacial Drift.....	1,871,271	2,012,473	141,202	.....
D	Solid Rock.....	*137,694	.....	.....	137,694
		2,008,965	2,012,473	3,508	.....
C	Glacial Drift.....	1,853,324	1,858,175	4,651	.....
B	Glacial Drift.....	1,578,828	1,557,911	.....	18,917
A	Glacial Drift.....	2,576,508	2,494,058	.....	82,450
A	Solid Rock.....	*4,188	.....	.....	4,188
		2,580,696	2,494,058	.....	86,638
1	Glacial Drift.....	1,173,751	1,252,444	.....	30,847
1	Glacial Drift.....	+109,540			
1	Solid Rock.....	536,024			
		1,819,315	1,815,985	.....	3,330
1	Retaining Wall.....	66,967	54,395	.....	12,572
1	Slope Paving.....	1,285	1,270	.....	15
2	Glacial Drift.....	729,989	728,269	.....	1,720
2	Solid Rock.....	472,624	465,007	.....	7,617
		1,202,613	1,193,276	.....	9,337

ENCLOSURES — *Continued.*

Section.	CLASSIFICATION.	<i>Estimates.</i>		<i>Comparative Exhibit.</i>	
		Dec. 31, 1894 Cu. Yds.	Sept. 30, 1895 Cu. Yds.	Increase Cu. Yds.	Reduction Cu. Yds.
2	Retaining Wall.....	37,668	35,294	.....	2,374
3	Glacial Drift.....	417,624	405,636	.....	11,998
3	Solid Rock.....	764,358	767,897	3,539	.....
		1,181,982	1,173,523	.....	8,459
3	Retaining Wall.....	13,807	11,899	.....	1,408
4	Glacial Drift.....	999,655	1,033,668	34,013	.....
4	Solid Rock.....	341,020	286,878	.....	54,142
		1,340,675	1,320,546	.....	20,129
4	Retaining Wall.....	58,564	68,437	9,873	.....
5	Glacial Drift.....	1,064,021	1,022,950	.....	41,071
5	Solid Rock.....	265,833	281,870	16,037	.....
		1,329,854	1,304,820	.....	25,034
5	Retaining Wall.....	73,424	71,881	.....	1,543
6	Glacial Drift.....	685,156	668,309	.....	16,847
6	Solid Rock.....	549,118	559,042	9,924	.....
		1,234,274	1,227,351	.....	6,923
6	Retaining Wall.....	33,736	29,603	.....	4,133
7	Glacial Drift.....	184,555	171,709	.....	12,846
7	Solid Rock.....	888,219	886,841	.....	1,378
		1,072,774	1,058,550	.....	14,224
7	Retaining Wall.....	7,935	5,919	.....	2,016
8	Glacial Drift.....	43,576	45,101	1,525	.....
8	Solid Rock.....	1,163,315	1,166,541	3,226	.....
		1,206,891	1,211,642	4,751	.....
8	Retaining Wall.....	3,957	2,567	.....	1,390
9	Glacial Drift.....	73,693	75,933	2,240	.....
9	Solid Rock.....	1,005,416	1,007,123	1,707	.....
		1,079,109	1,083,056	3,947	.....
10	Glacial Drift.....	31,104	27,802	.....	3,302
10	Solid Rock.....	1,141,270	1,145,371	4,101	.....
		1,172,374	1,173,173	799	.....
11	Glacial Drift.....	44,032	39,033	.....	4,999
11	Solid Rock.....	989,700	989,776	76	.....
		1,033,732	1,028,809	.....	4,923
12	Glacial Drift.....	30,000	33,201	3,201	.....
12	Solid Rock.....	1,000,500	998,260	.....	2,240
		1,030,500	1,031,461	961	.....
12	Retaining Wall.....	10,000	12,332	2,332	.....

ENCLOSURES—Continued.

Section.	CLASSIFICATION.	Estimates.		Comparative Exhibit.	
		Dec. 31, 1894 Cu. Yds.	Sept. 30, 1895 Cu. Yds.	Increase Cu. Yds.	Reduction Cu. Yds.
13	Glacial Drift.....	35,000	36,896	1,896	.....
13	Solid Rock.....	1,053,700	1,042,590	.....	11,110
		1,088,700	1,079,486	.....	9,214
13	Retaining Wall.....	20,000	18,135	.....	1,865
14	Glacial Drift.....	379,255	382,696	3,441	.....
14	Solid Rock.....	1,023,500	1,024,500	1,000	.....
		1,402,755	1,407,196	4,441	.....
14	Retaining Wall.....	23,000	16,987	.....	5,013
15	Glacial Drift.....	36,000	37,325	1,325	.....
15	Solid Rock.....	639,700	638,760	.....	940
		675,700	676,085	385	.....
15	Retaining Wall.....	37,400	26,010	.....	11,390

* See explanation in report.

† Afterwards added by Mr. Alexander.

Report on the Re Measuring of the Main Channel of the Drainage Canal.

This work was commenced June 7th, 1895, with a field force of eight men and an office force of one man. On June the 18th, the field force was increased to a total of ten men and on the 20th the office force was increased to a total of four men. The whole of this force continued in service to nearly the completion of the work, which was August 15th for the field party and September 30th for the office party.

Measurements were commenced at Robey street and the Chicago River and carried through to the end of the canal at Lockport.

In chaining the line, the established stationing was checked as well as it could be by using the ordinary steel tape and pins; the object being not to attempt to remeasure absolutely the length of the canal, but to detect an error that would have any appreciable effect upon the quantities in any section. No difference of this character was observed except between station 767 and the "P. C." of the curve near this point where the chaining was 2.5 feet shorter than the pluses on the ground indicated. This error is a known one, I believe, and is doubtless allowed for. In no other place was a

difference of more than a few tenths in a mile noted, and this was where the chaining had to be done over all manner of obstructions. To have checked the chaining precisely would have required much time and labor and the use of many appliances, while the variations thus established would have had little or no effect upon the estimated quantities.

In taking the levels, the construction benches, as furnished by the division engineers, were used as starting points, but a continuous line of levels was run over each section. In no case was a difference of more than three-hundredths noted at the end of any section, except on some of the original surface benches that were known to have been disturbed.

On that portion of Section "O." lying between Robey street and Western avenue, it was impossible to obtain any data from the field as to the original surface, from the fact that it was so radically changed from its former condition. At this place, therefore, an old contour map was used for constructing the cross sections.

On Section "N" nearly all of the original surface had been removed for a distance of several hundred feet on each side of the center line, consequently the

surface elevations had to be taken a long distance from their true positions.

On Sections "E" and "F" no information was obtainable on the ground as to the probable rock surface, so the elevations as shown by the test pits and borings were taken as correct.

On Section "D," as no information of any practical value regarding the rock surface could be obtained, the whole section was figured as glacial drift. It is probable there will be in this section from 40,000 to 75,000 cubic yards of rock.

On Sections "B" and "A," the canal occupies the old bed of Desplaines River, and the original surface has been almost entirely obliterated by the construction work. Under these conditions it was very difficult to obtain any information of value on the ground. By using what data could be found in connection with an original contour map the results shown below were deduced.

On the remaining sections to Lemont there will doubtless be considerable difference between the quantities given in this report and those previously submitted, for the following reasons:

First—The rock surface was more fully uncovered when these measurements were taken than previously.

Second—The surface of the rock, doubtless, varied greatly between opposite sides of the channel, while in arriving at these results it was, necessarily, assumed a plane surface.

Third—The dividing line between "glacial drift" and "solid rock" is in many places very indefinite and would depend largely upon the judgment of the individual establishing it.

Fourth—The amount of rock to be removed to get a foundation for the retaining wall is a matter of judgment, which would affect the amount of rock and wall.

Fifth—In places where the wall had been completed and back filled, it was impossible to ascertain where the original surface of the rock was, a condition of affairs that would, of course, effect all of the quantities calculated.

Sixth—In many places the original surface of the ground had been removed to the spoil bank or covered up by the same, being thus completely lost.

These are some of the principal difficulties met with in arriving at the results herewith submitted.

On Section 6 very little data could be obtained regarding the original surface as very radical changes had been wrought by the hydraulic dredges for a space considerably wider than the main channel.

In considering the sections below Lemont, I think the *totals* of earth and rock should be compared, and not each separately, for the reason that a slight variation in establishing the dividing line between the two, a line always uncertain, makes considerable difference in the two quantities. The variation in percentage of the earth quantities, if taken alone, will doubtless be great, as the depth of the earth is so small.

The excavation and wall in the clay pockets is a very uncertain matter, as it is impossible to estimate closely what will be required before the work is actually performed. I think in comparing quantities these clay pockets should hardly be considered.

The retaining wall on Section 14 has been calculated from Station 1433 on each side to the end of the section.

On Section 15 the wall has been calculated on both sides and the end, except for a distance of 1100 feet on the right side, where an opening is shown on the plan.

ESTIMATED QUANTITIES IN CUBIC YARDS, SECTIONS "O" TO 15 INCLUSIVE.

Section	Glacial Drift	Solid Rock	Retaining Wall	Remarks.
O.....	1,512,182	.....	.....	Collateral Channel, 131,200
N.....	1,103,008	.....	.....	.....
M.....	709,585	.....	.....	.....
L.....	1,079,949	.....	.....	.....
K.....	1,139,933	.....	.....	.....
I.....	1,126,508	.....	.....	.....
H.....	1,079,295	.....	.....	.....
G.....	1,347,955	.....	.....	.....
F.....	1,078,339	16,150	.....	.....
E.....	1,799,123	74,831	.....	.....
D.....	2,012,473	.....	.....	.....
C.....	1,858,175	.....	.....	.....
B.....	1,557,911	.....	.....	.....
A.....	2,494,058	.....	.....	.....
1.....	1,252,444	563,541	54,395	Paving, 1,270
2.....	728,269	465,007	35,294	.....
3.....	405,626	767,897	11,899	.....
4.....	1,033,668	286,878	68,437	.....
5.....	1,022,950	281,870	71,881	.....
6.....	668,309	559,042	29,603	.....
7.....	171,709	886,841	5,919	.....
8.....	45,101	1,166,541	2,567	.....
9.....	75,933	1,007,123	.....	.....
10.....	27,802	1,145,871	.....	.....
11.....	39,033	989,775	.....	.....
12.....	33,201	980,552	12,332	Yds. of wall in clay pockets
12.....	.....	17,708	.....	Yds. of solid rock in clay pockets
13.....	36,896	1,006,590	18,135	Yds. of wall in clay pockets
13.....	.....	36,000	.....	Yds. of solid rock in clay pockets
14.....	382,696	1,014,762	16,987	.....
14.....	.....	3,838	.....	Yds. of solid rock wall foundation
14.....	.....	5,900	.....	Yds. of solid rock in clay pockets
15.....	37,325	633,653	26,010	.....
15.....	.....	5,107	.....	Yds. of solid rock wall foundation

Respectfully submitted,

(Signed) R. B. SEYMOUR,

Engineer in Charge of Remeasuring.

To Isham Randolph, Esq, Chief Engineer, Sanitary District of Chicago."

September 30, 1895.

REPORT ON PETITIONS FOR STREET RAILWAY RIGHT OF WAY ON KEDZIE AVENUE AND CLAIM FOR CANAL LAND TAKEN.

Mr. Kelly, Chairman, presented a report from the Committee on Judiciary, with reference to and accompanied by communications, asking surface street railway right of way on Kedzie avenue, from the Central Rapid Transit Company, the Chicago General Street Railway Company and the Chicago and Worth Street Railway Company, presented and referred to that committee at the meetings held July 18 and 25, 1894, and June 5, 1895, (pages 2061, 2067 and 2662 of the Proceedings), and also communication from the Canal Commissioners, presented and referred to that committee at the meeting held February 21, 1894, (page 1791 of the Proceedings), with reference to a parcel of land near the Ogden Dam, claimed by said Canal Commissioners and said to

have been taken by the District; and the report was read.

Mr. Kelly, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed, and, with enclosures, placed on file, and the recommendation made in the report concurred in.

On roll call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and, with enclosures, placed on file, and the recommendation made in the report concurred in.

The following is

THE REPORT:

"CHICAGO, Oct. 16th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—During the months of

July 1894 and June 1895, requests were made to your Honorable Body by the Central Rapid Transit Company, the Chicago General Street Railway Company and the Chicago & Worth Street Railway Company for a signature by the District to petitions of the respective street railway companies for the frontage on Kedzie avenue. Inasmuch as the District is itself a municipal corporation having no special interest in the uses of a street railway along its property, and since it could not well make any choice between the three companies asking for signature, your Committee recommend that the requests be not granted and return the communications for filing.

There was also referred to your Committee (page 1791 of Proceedings) a communication from the Canal Commissioners in regard to two and one-half acres of land in Sections one (1) and twelve (12) of Township thirty-eight (38) North, Range twelve (12) East of the Third Principal Meridian. Our Attorney, by the direction of your Committee, replied to the communication of the Canal Commissioners and showed that the District did not intend to use any of the land in question except merely to cross same, and that by the terms of the Canal Commissioners deed the use of the strip of land was reserved to the Ogdens and their assigns for a public highway so that the District would have the use of said strip of land. The Secretary of the Canal Commissioners expressed himself as entirely satisfied with this explanation. We, therefore, return for filing the communication.

Respectfully submitted,

(Signed) THOMAS KELLY,
Chairman.
WM. GOLDENWECK,
JOHN J. ALTPETER,
Committee on Judiciary."

(Four (4) enclosures.)

REPORT ON PROPOSITION FOR ICE PRIVILEGE ON ALLEN ICE POND AT LOCKPORT AND BILL FOR WORK ON DAM NO. 1, AT JOLIET.

Mr. Eckhart, Chairman, presented a report from the Committee on Finance, with reference to and accompanied by a communication from Yost Brothers, making proposition for the privilege of cutting ice during 1895 and 1896 on the "Allen Ice Pond" at Lockport, presented and referred to that committee at the meeting held Sept. 18, 1895, (page 2857

of the Proceedings), recommending that said proposition be not accepted, and also returning for filing a communication from the Board of Canal Commissioners, enclosing bill (\$1,000) for repair work on Dam No. 1, at Joliet, presented and referred to that Committee at the meeting held May 24, 1895 (page 2653 of the proceedings); and the report was read.

Mr. Eckhart, seconded by Mr. Russell, moved that the report be adopted, ordered printed and, with enclosures, placed on file, and the recommendation made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and with enclosures placed on file, and the recommendation made in the report concurred in.

The following is

THE REPORT:

"CHICAGO, Oct. 16, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The Finance Committee, to whom was referred at the meeting held September 18, 1895 (page 2857 of the Proceedings), the communication of August 3, 1895, from Yost Brothers, making a proposal for the use of the Allen ice pond for the coming winter, respectfully report that inasmuch as the bacteriological analysis, made at the instance of the District at the time the condemnation proceedings were under way, showed that the ice taken from the Allen pond was by reason of impurities not fitted for commercial uses, the proposition of Yost Brothers should be declined and the Committee so recommend and return said communication for filing.

We also return for filing the communication of May 23d, accompanied by bill from the Canal Commissioners.

Respectfully submitted,

(Signed) B. A. ECKHART,
Chairman.
W. H. RUSSELL,
THOMAS KELLY,
Committee on Finance."

(Two (2) enclosures.)

REPORT ON REQUISITION NO. 940.

Mr. Eckhart, Chairman, presented a report from the Joint Committee on Finance and Engineering, with reference to and accompanied by Requisition No. 940, for the Police Department, presented and referred to that Committee at the meeting held October 9, 1895 (page 2863 of the Proceedings), recommending that said Requisition be allowed; and the report was read.

Mr. Eckhart, seconded by Mr. Russell, moved that the report be adopted, ordered printed and placed on file, the recommendation made therein concurred in and the accompanying requisition allowed.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Excused and not voting—Mr. Gilmore—one (1). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, the recommendation made therein concurred in and the accompanying requisition allowed.

The following is

THE REPORT:

“CHICAGO, Oct. 16, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Joint Committee on Finance and Engineering have considered Requisition No. 940, for the Police Department, for coal and oil, presented and referred to us by your Honorable Body at the meeting held October 9, 1895, (page 2863 of the Proceedings) and respectfully return said Requisition herewith, with the recommendation that the same be allowed.

Respectfully submitted,

(Signed) B. A. ECKHART,
Chairman.
L. E. COOLEY,
WM. BOLDENWECK,
W. H. RUSSELL,
JOHN J. ALTPETER,
THOMAS KELLY,

Joint Committee on Finance and Engineering.”

(One (1) enclosure.)

REPORT ON REQUEST FOR REPAIR OF EAST BANK OF ILLINOIS AND MICHIGAN CANAL FROM DAM NO. 1 TO HYDE'S MILL AND ON REPORT ON FILING OF OFFICIAL PLANS.

Mr. Eckhart, Chairman, presented a report from the Joint Committee on Finance and Engineering, returning for filing a report from the Chief Engineer and the communication from the Canal Commissioners, concerning the repair of the east bank of the Canal at Joliet, beginning at Dam No. 1 and extending to the north side of Hyde's Flour Mill, presented and referred to that Committee at the meeting held December 19, 1894, (page 2370 of the Proceedings); and also report from the Chief Engineer, with reference to the filing of official plans, presented and referred to that Committee at the meeting held March 23, 1893, (page 1113 of the Proceedings); and the report was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the report be adopted, with enclosed report from Chief Engineer, be ordered printed, and, with all enclosures, placed on file.

The motion prevailed unanimously, and it was so ordered.

the following is

THE REPORT, WITH ENCLOSURES:

“CHICAGO, Oct. 16, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In regard to the communication from John Ryan, General Superintendent of the Illinois and Michigan Canal, requesting the repair of the east bank of said Canal at Joliet, beginning at Dam No. 1 and extending to the north side of Hyde's Flour Mill, presented and referred to the Joint Committee on Finance and Engineering at the meeting held December 19, 1894, (page 2370 of the Proceedings) your Committee respectfully submits a report of the Chief Engineer to the Committee on the subject, stating that the conditions do not seem to demand any action on the part of the District.

We therefore return for filing the communication referred to us by your Honorable Body, without recommendation in the premises.

Your Committee also returns for filing without recommendation the report of the Chief Engineer, with reference to the filing of official plans, presented and

referred at the meeting held March 23, 1893, (page 1113 of the Proceedings.)

Respectfully submitted,

(Signed) B. A. ECKHART,
Chairman.

L. E. COOLEY,
WM. BOLDENWECK,
W. H. RUSSELL,
JOHN J. ALTPETER,
THOMAS KELLY,

Joint Committee on Finance and Engineering."

(Engineer's report and two (2) enclosures.)

—
"CHICAGO, June 20, 1895.

To the Joint Committee on Finance and Engineering:

GENTLEMEN—Taking up the subject matter of the communication of Mr. John Ryan, Superintendent Illinois and Michigan Canal, which was referred to you on December 19, 1894, I have to advise you that early in the present year, in company with Assistant Engineer C. L. Harrison, I examined the foundation walls of Hyde's Mill just above Dam No. 1, and became satisfied that the conditions existing there did not demand any action on the part of this District. The wall appeared to me to be sufficiently high and of adequate strength to resist the flood waters of the Desplaines.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

REPORT ON CHANGING OF SANTA FE AND
POSTAL TELEGRAPH WIRES AT
LEMONT CROSSING.

Mr. Eckhart, Chairman, presented a report from the Joint Committee on Finance and Engineering, with reference to and accompanied by report from the Chief Engineer, concerning the changing of the Santa Fe and Postal Telegraph wires at the Lemont crossing, presented and referred to that Committee at the meeting held September 18, 1895, (page 2835 of the Proceedings) recommending that the action of the Chief Engineer in changing said wires be approved and payment of the bill for said work be authorized; and the report was read.

Mr. Boldenweck, seconded by Mr. Cooley, moved that the report be adopted, ordered printed and with enclosure, placed on file, and the recommendations made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Gilmore, Kelly, Russell and Wenter—seven (7). Excused and not voting—Mr. Eckhart—one (1). Nays—none.

Upon which result the President declared the motion carried, the report adopted, ordered printed and, with enclosure, placed on file, and the recommendations made in the report concurred in.

The following is

THE REPORT:

"CHICAGO, Oct. 16, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In regard to the report of the Chief Engineer, with reference to the changing of the Santa Fe and Postal Telegraph wires at the Lemont crossing, presented to your Honorable Body and referred to the Joint Committee on Finance and Engineering at the meeting held September 18, 1895, (page 2835 of the Proceedings) your committee respectfully report that they have considered the question, and return herewith the report for filing, with the recommendation that the action of the Chief Engineer in changing said wires, as set forth in the report, be approved and payment of the bill for said work (\$487.58) authorized.

Respectfully submitted,

(Signed) L. E. COOLEY,
WM. BOLDENWECK,
W. H. RUSSELL,
JOHN J. ALTPETER,
THOMAS KELLY,

Joint Committee on Finance and Engineering."

(One (1) enclosure.)

CREDITORS CLAIMS AGAINST THE HEIDENRICH COMPANY.

The Clerk presented a communication from Walter W. Ross, Attorney for certain creditors of the Heidenrich Company, accompanied by statements and affidavits.

Mr. Eckhart, seconded by Mr. Kelly, moved that the communications and enclosures be referred to the Joint Committee on Judiciary and Finance without reading.

The motion prevailed unanimously, and the communication and enclosures were so referred.

AGREEMENT WITH WEST CHICAGO PARK COMMISSIONERS FOR CROSSING OF SOUTHWEST BOULEVARD BY MAIN CHANNEL.

The Clerk presented a communication from Geo. F. Talty, Secretary of the Board of West Chicago Park Commissioners, returning contract for the Main Channel crossing of Southwest boulevard, the same being duly executed by both parties thereto, as directed at the meeting held June 5, 1895, (page 2661 of the Proceedings); and the communication was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the communication and accompanying agreement be ordered printed and placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE COMMUNICATION AND ACCOMPANYING AGREEMENT:

"Office of
WEST CHICAGO PARK COMMISSIONERS, }
Chicago, June 26th, 1895. }

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—I herewith send you the original of the agreement prepared for signature between the Sanitary District of Chicago and the West Chicago Park Commissioners, relating to the proposed crossing of the Southwest boulevard by the Main Channel of your District, duly executed by both the President and myself for the West Chicago Park Commissioners. The duplicate of said agreement we retain.

Yours very truly,

(Signed) GEO. F. TALTY,
Secretary.

(Enclosing executed agreement.)

The following is

THE AGREEMENT:

"*This Agreement*, Made this fifth day of June, A. D. 1895, by and between the Sanitary District of Chicago, party of the first part, and the West Chicago Park Commissioners, party of the second part, witnesseth; that,

WHEREAS, First party desires to cross with its main drainage channel that part of the Southwest boulevard of second party, which lies east of Western avenue in the City of Chicago, and recognizes

that it must, so far as possible, put said portion of said boulevard so crossed by it in the same condition as before, by providing a suitable crossing in the line of said boulevard; therefore, in consideration of the premises and of the reciprocal premises herein made, said parties do hereby covenant and agree as follows:

First—Second party hereby gives and grants to the Sanitary District of Chicago the right to excavate across that portion of its Southwest boulevard, which lies east of Western avenue, the main drainage channel of said district.

Second—First party agrees to construct over its channel, so excavated, across said boulevard, a fixed bridge of iron or steel of standard construction, with a roadway of twenty-four feet in width. Said bridge shall not be less than two hundred and fifty (250) nor more than three hundred (300) feet in length. The lowest projection of iron work on said bridge shall not be less than twenty-two (22) feet above datum, and the grades of the approaches thereto shall not exceed one foot in twenty-five (25) feet. First party shall also construct a separate bridge over its Channel in the line of Western avenue to accommodate traffic on said thoroughfare. First party shall maintain said boulevard bridge in good and sightly order, and repair during the period of time that said boulevard shall remain open for public travel.

Third—First party shall grade the approaches to said bridge to a level with the approaches to said Western avenue bridge and shall extend said grading so as to cover the entire surface of said boulevard gradually sloping to the ground at the east line of said boulevard. Where necessary, retaining walls for the embankments shall be constructed by first party which shall extend eighteen inches above the surface of the adjoining roadway, and shall be capped with a neat stone coping.

Fourth—First party shall acquire title to and convey to second party sufficient land to the northward of that portion of the east and west boulevard which lies in the vicinity of Western avenue to give said boulevard a uniform width of at least two hundred and forty (240) feet where it deflects to the northward at the northern approach to said boulevard bridge.

Fifth—First party shall procure the elevation of the tracks of the Chicago, Santa Fe and California Railway Company and the tracks of other railroads

adjacent thereto sufficiently to permit of a grade from the south end of said boulevard bridge to and through the subway under said railroad tracks not to exceed one foot in twenty-five (25) feet, and with ample headroom under said subway.

Sixth—First party shall fill in at its own expense such portion of said Southwest boulevard, which lies south of the West Fork of the South Branch of the Chicago River and north of the Illinois and Michigan Canal, as second party shall direct. Said filling shall be made of such width and height as shall accord with the stakes put in by the engineers of second party, and said filling shall be properly levelled off at the surface.

Seventh—The building of the approaches and the filling herein provided for shall be carried on and completed without unnecessary delay, and all of the work herein specified shall be fully completed on or before May 1st, 1896.

Eighth—First party may at once cut across that portion of said Southwest boulevard which lies east of Western avenue, a channel sixty (60) feet wide, so as to give access to excavation to the west of said boulevard. This channel shall be provided with a pontoon or other temporary bridge to accommodate travel on both Western avenue and said boulevard until the bridges herein provided for shall have been constructed.

Ninth—This agreement shall in no wise constitute a waiver on the part of said Sanitary District of the right to further enlarge its channel to meet the

requirements of the Act organizing said District, nor a waiver of the right at some future time to replace said fixed bridge over said boulevard by a movable or swing bridge, the same to be constructed and maintained by said District.

In witness whereof the parties hereto have caused these present to be signed by their respective officers thereunto duly authorized and their respective corporate seals to be hereto affixed, the day and year first above written.

SANITARY DISTRICT OF CHICAGO,

(Signed) By FRANK WENTER,

President of Board of Trustees.

Attest:

THOS. F. JUDGE,

Clerk of the Sanitary District of Chicago.

[SEAL]

WEST CHICAGO PARK COMMISSIONERS,

(Signed) By HARVEY T. WEEKS,

President.

GEO. F. TALTY,

Secretary West Chicago Park Commissioners."

[SEAL]

ADJOURNMENT.

On motion of Mr. Gilmore, seconded by Mr. Altpeter, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

OCTOBER 23, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and eighty-fifth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto building, Wednesday, October 23, 1895, at 2 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wenter—six (6) members, were present.

MINUTES.

The minutes of the regular meeting held October 16, 1895, were approved as printed, on motion of Mr. Eckhart, seconded by Mr. Boldenweck.

VOUCHERS.

The Clerk presented the following vouchers:

LAW DEPARTMENT.

The Gunthorp-Warren Printing Company (printing).....	\$ 29 70	
C. S. Austin, (ice).....	3 00	
		\$ 32 70

GENERAL ACCOUNT.

Chicago Edison Company, (electric lighting).....	\$ 35 93
--	----------

Chicago Telephone Co., (telephone service, Chicago to Lockport, October-

December, 1895)..... \$ 764 17

Sharp & Smith, (vaccine points)..... 22 50

\$822 60

LAW DEPARTMENT.

Ind Account—

Geo. E. Dawson, (accrued 1894 taxes, Flaherty land).....

118 64

Total.....

\$973 94

ENGINEERING DEPARTMENT.

**Construction Account—*

Griffiths & McDermott, (Sec. 1, Oct. 1, 1895)..... \$11,147 60

Total Retained.

CLAUSE "J"
Amount re-
leased on
this Voucher.

\$15,587 34

\$ 720 61

Gilman & Company, (Sec. 3, Oct. 1, 1895) 19,315 62

McArthur Brothers, (Sec. 4, Oct. 1, 1895) 9,157 34

The Qualey Construction Co., (Sec. 5, Oct. 1, 1895)..... 10,395 88

Mason, Hoge & Company, (Sec. 6, Oct. 1, 1895)..... 15,504 12

Mason, Hoge & Company, (Sec. 7, Oct. 1, 1895)..... 15,011 94

Mason, Hoge, King & Co., (Sec. 8, Oct. 1, 1895)..... 10,902 93

Halvorson, Richards & Co., (Sec. 9, Oct. 1, 1895)..... 9,352 97

Mason, Hoge & Company, (Sec. 11, Oct. 1, 1895)..... 15,047 60

Mason, Hoge & Company, (Sec. 12, Oct. 1, 1895)..... 9,758 83

Mason, Hoge & Company, (Sec. 13, Oct. 1, 1895)..... 4,800 03

Smith & Eastman, (Sec. 14, Oct. 1, 1895) 21,216 13

Wright, Meysenburg, Sinclair & Carry, (Sec. 15, Oct. 1, 1895)..... 15,126 12

Heldmaier & Neu, (Sec. A, Oct. 1, 1895) 3,181 33

Heldmaier & Neu, (Sec. B, Oct. 1, 1895) 6,213 38

Western Dredging & Improvement Co., (Sec. C, Oct. 1, 1895)..... 7,690 38

E. D. Smith & Co., (Sec. D, Oct. 1, 1895) 8,374 07

Angus & Gindele, (Sec. E, Oct. 1, 1895) 6,402 38

Weir, McKechney & Co., (Sec. F, Oct. 1, 1895)..... 4,078 38

Gahan & Byrne, (Sec. G, Oct. 1, 1895).... 4,766 23

Gahan & Byrne, (Sec. H, Oct. 1, 1895).... 8,839 89

Christie & Lowe, (Sec. I, Oct. 1, 1895).... 2,625 00

Christie & Lowe, (Sec. K, Oct. 1, 1895).... 10,171 87

The Heidenreich Company, (Sec. L, Oct. 1, 1895)..... 4,969 57

The Heidenreich Company, (Sec. M, Oct. 1, 1895)..... 3,797 50

Hayes Bros., et al. (Sec. O, Oct. 1, 1895) 1,195 42

McMahon & Montgomery Co. et al. (Sec. O, Oct. 1, 1895)..... 2,267 22

Mason, Hoge & Co., (Sec. 7, Extra work—Dimension stone, rip-rap work, earth core and embankment, Oct. 1, 1895)... 100 00

Postal Telegraph-Cable Co. (Sec. 8, Extra work—Changing Santa Fe and Postal wires at Lemont crossing, Sept. 10, 1895— <i>final</i>		\$ 487 58
T. A. Kearns, (Sec. 8, Extra work—Bridge trestle at Lemont roadway crossing, Oct. 10, 1895— <i>final</i>).....		965 37
Dolase & Shepard, (Sec. O, Extra work—temporary bridge and roadway, Western avenue and Boulevard, Oct. 15, 1895).....		506 80
Total.....		*\$243,370 48
Grand total.....		\$244,344 42

*Paid by warrants, with interest coupons, drawn against the tax levy of 1895.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

SPOILING OF MATERIAL EXCAVATED FROM COLLATERAL CHANNEL ON SECTION N ON RIGHT OF WAY OF DISTRICT, AND REDUCTION OF PRICE FOR MATERIAL SPOILED AND LEFT THEREON.

The Clerk presented a report from the Chief Engineer, asking authority for the granting of permission to the contractors for Section N of the Main Channel to spoil the material excavated from the collateral channel on said section on the right of way of the District, the price for said excavation to be reduced in case said material be left on right of way at the expiration of the contract, as set forth in the report; and the report was read.

Mr. Boldenweck, seconded by Mr. Kelly, moved that the report be ordered printed and placed on file, and the authority requested therein granted.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wenter—six (6). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed and placed on file, and the authority requested therein granted.

The following is

THE REPORT:

“CHICAGO, Oct. 22, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The contractors for Sections N and O desire permission to deposit the material excavated from the collateral channel on the right of way of the District, on condition that same shall be removed within the life of the contract or any authorized extension thereof, so far as possible, but that if any of said material shall be left on the ground at the expiration of said contract period, then a deduction of two cents per cubic yard shall be made in the price paid for excavation, and the material shall be at the disposition of the District.

I can see no objection to granting this permission if same meets your approval.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer.”

COMMUNICATION WITH REFERENCE TO DELAY OF WORK ON SECTION O.

The Clerk presented a communication from the McMahon & Montgomery Company, Green's Dredging Company, Fitz-Simons & Connell Company, Chicago Dredging & Dock Company, and Hayes Brothers, contractors for Section O, with reference to delay of work on said section; and the communication was read.

Mr. Kelly, seconded by Mr. Eckhart, moved that the communication be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the communication was ordered printed and so referred.

The following is

THE COMMUNICATION:

“CHICAGO, Ill., Oct. 1st, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Permit us to remind your Honorable Board that we completed all that part of “Section O” lying between the center line of Robey street and the east line of the Boulevard on the first day of October, 1894, and that from that time until the fourteenth day of September, 1895, all work by us on “Section O” was prevented because your Honorable Board would not permit us to cut through the Boulevard.

During all this time we were obliged, at great cost and expense, to keep a very large and valuable plant continually ready to resume work under our contract as soon as your Honorable Board should give us permission to do so. Though we might readily have found profitable work for our plant at other places, yet we could not do so because of our contract with this District, and because we were repeatedly and constantly assured by its representatives that we should be given permission to proceed with our contract in a few days.

On the fourteenth day of September, 1895, we received the following communication:

“THE SANITARY DISTRICT OF CHICAGO, }
CHICAGO, Sept. 14, 1895. }

Messrs. McMahon & Montgomery Co., et al., 425 North Halsted Street, City:

GENTLEMEN—You can proceed to cut the channel across the western boulevard of Western avenue, as the same is now staked out by the Engineer in charge.

As soon as you pass the west line of Western avenue you can enlarge the channel to 110 feet wide on the bottom, side slopes two to one, which is the standard section for this portion of the work.

Yours truly,

ISHAM RANDOLPH,
Chief Engineer.”

The staking and the explanations of the Engineer in charge and of the Chief Engineer show that no permission is given to excavate further than the east line of the railroad property. Availing ourselves of this permission we immediately resumed operations, and although the manner in which it is to be done will delay us and make our work more expensive, we expect to complete this work in the near future. We trust that your Honorable Board will see to it that we are not again prevented from performing our contract as quickly as possible, because it is an injury not only to us but also to the District.

Our grievances have been repeatedly reported and presented to the Chief Engineer of the District, to the individual members of this Honorable Board, to the Joint Committee on Engineering and Finance and to this Honorable Board itself. The Chief Engineer insists that he has no jurisdiction to hear or pass on our claim for the damage resulting from such prevention, has refused to entertain jurisdiction thereof and has referred us to your Honorable Board.

We therefore ask that our claim in the premises may be considered as early as possible either by this Honorable Board or by some duly authorized committee thereof.

Very respectfully,
(Signed)

McMahon & Montgomery Co.,

By J. A. McMAHON,
Its President.

Green's Dredging Co.,

By O. B. GREEN,
Its President.

FitzSimons & Connell Co.,

By CHAS. FITZSIMONS,
Its President.

Chicago Dredging & Dock Co.,

By FRED DAVIS,
Its Vice-President.

Hayes Brothers.”

ADJOURNMENT.

On motion of Mr. Boldenweck, seconded by Mr. Russell, the Board then adjourned.

THOS. F. JUDGE,
Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

OCTOBER 30, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and eighty-sixth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, October 30, 1895, at 2 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Cooley, Eckhart, Gilmore, Kelly, Russell and Wenter—seven (7) members, were present.

MINUTES.

The minutes of the regular meeting held October 23, 1895, were approved as printed, on motion of Mr. Kelly, seconded by Mr. Russell.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

Isham Randolph, (postage stamps).....	\$	32 00	
Seelig & Kandler, (repairing level).....		14 20	
Chas. L. Harrison, (traveling).....		31 85	
	\$	78 05	

GENERAL ACCOUNT.

Rialto Company, (rent of offices to Oct. 31, 1895).....	\$1,875 00
Total.....	\$1,953 05

ENGINEERING DEPARTMENT.

CLAUSE "J"

**Construction Account—*

		Total Retained.	Amount re- leased on this Voucher.
Griffiths & McDermott, (Sec. 1, Oct. 16, 1895).....	\$10 693 27		
McArthur Brothers, (Sec. 2, Oct. 16, 1895) 840 00		\$14,698 96	\$ 888 38
Gilman & Company, (Sec. 3, Oct. 16, 1895) 19,741 75			
McArthur Brothers, (Sec. 4, Oct. 16, 1895) 3,687 25			
The Qualey Construction Co., (Sec. 5, Oct. 16, 1895).....	12,123 12		
Mason, Hoge & Company, (Sec. 6, Oct. 16, 1895).....	19,410 18		
Mason, Hoge & Company, (Sec. 7, Oct. 16, 1895).....	13,908 56		
Mason, Hoge, King & Co., (Sec. 8, Oct. 16, 1895).....	12,230 97		
Halvorson, Richards & Co., (Sec. 9, Oct. 16, 1895).....	10,294 98		
Mason, Hoge & Company, (Sec. 11, Oct. 16, 1895).....	11,025 65		
Mason, Hoge & Company, (Sec. 12, Oct. 16, 1895).....	10,639 50		
Mason, Hoge & Company, (Sec. 13, Oct. 16, 1895).....	4,917 72		
Smith & Eastman, (Sec. 14, Oct. 16, 1895) 22,531 25			
Wright, Meysenburg, Sinclair & Carry, (Sec. 15, Oct. 16, 1895).....	14,971 25		
Heldmaier & Neu, (Sec. A, Oct. 16, 1895). 4,113 32		26,584 95	
Heldmaier & Neu, (Sec. B, Oct. 16, 1895). 6,581 92		9,035 01	664 20
Western Dredging & Improvement Co., (Sec. C, Oct. 16, 1895).....	6,662 25		
E. D. Smith & Co., (Sec. D, Oct. 16, 1895). 5 575 01			
Angus & Gindele, (Sec. E, Oct. 16, 1895). 5,599 12		6,156 00	
Weir, McKechney & Co., (Sec. F, Oct. 16, 1895).....	4,130 00		
Gahan & Byrne, (Sec. G, Oct. 16, 1895)... 4,960 27		8,983 80	
Gahan & Byrne, (Sec. H, Oct. 16, 1895)... 8,922 51		7,042 07	
Christie & Lowe, (Sec. K, Oct. 16, 1895)... 10,237 50		1,375 00	
The Heidenreich Company, (Sec. L, Oct. 16, 1895).....	5,131 60	1,195 79	
The Heidenreich Company, (Sec. M, Oct. 16, 1895).....	5,012 70	2,018 10	
Hayes Bros., et al. (Sec. N, Oct. 16, 1895) 2,221 80		2,240 20	
McMahon & Montgomery Co. et al. (Sec. O, Oct. 16, 1895).....	3 477 42	2,312 60	
Mason, Hoge & Co., (Sec. 7, Extra work—Dimension stone, rip-rap work, earth core and embankment, Oct. 16, 1895).. 200 00			
Mason, Hoge, King & Co., (Sec. 8, Extra work—Moving cable towers, Oct. 21, 1895)— <i>Final</i>	1,600 00		
Total.....		\$241,440 92	
Grand total.....		\$243,393 97	

*Paid by warrants, with interest coupons, drawn against the tax levy of 1895.

Mr. Kelly, seconded by Mr. Russell, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Gilmore, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

MONTHLY REPORT FROM ENGINEERING DEPARTMENT.

The Clerk presented a report from the Engineering Department for the month of September, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, Oct. 24, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I herewith transmit the reports of the Divisions of Construction and Drafting and Designing, showing the detailed operations of the Engineering Department for the month of September, 1895; also a classified statement of expenses to Oct. 1st, 1895.

The expenses for the month of September were as follows:

Salaries.....	\$ 16,474 50
Supplies, etc.....	1,522 91
Regular contractors' estimates.....	503,205 62
Extra contractors' estimates.....	1,502 72
Total.....	<u>\$ 521,705 75</u>

I estimate the expenses of this Department for the month of October will be \$500,000.00.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer.”

“CHICAGO, Oct. 28, 1895.

Isham Randolph, Esq., Chief Engineer:

DEAR SIR—I herewith present my report of the work of construction for the month of September, together with a summary of the condition of the work

up to the 1st inst. Rain fell on five days during the month, which, with the preceding heavy rainfall at the end of the former month, materially affected the output of every plant on the work, still, the total value of the work done exceeded the average contract requirements, and several of the sections will be completed during the current month. The plant and methods employed are substantially the same as heretofore mentioned, and the results may be summarized as follows:

Section O—A force of teams and scrapers was employed most of the month near Western avenue excavating from the Main Channel and filling in the bridge approaches at that place. About the 20th the steam dredges resumed operations at this point, the excavated material being loaded into scows and taken away. Pile bridge seats were also driven for the temporary bridge span at Western avenue boulevard. The amount of material excavated on this section during the month was 31,900 cubic yards.

On the Collateral Channel steam dredges were employed $31\frac{1}{2}$ shifts, handling 21,700 cubic yards, an average of 689 yards each per shift.

Section N—A small force of teams, wagons and shovellers was employed just east of Kedzie avenue removing material from the Main Channel which was used for street filling. A team and scraper force was engaged from the 16th to the 23d in excavating a pit and shaping inclines for the use of two steam shovels which were installed with the necessary tracks and 100 horse-power hoisting engine, and commenced excavating on the 25th and 26th, respectively. The yardage moved during the month, i. e. up to the 25th—the time of taking the monthly estimates—was 6,600 cubic yards.

Sections L and M—A little work was done at the west end of Section L with small cars, amounting to 628 cubic yards. This was done at a place which was inaccessible for the steam shovel and incline plant. Of the four steam shovels, three were operated both day and night shifts, and one day shift only. The total number of shifts employed were 151, the output being 100,072 cubic yards, an average of 663 yards per shift. A force of laborers was employed in trimming the slopes and bottom of the channel behind the shovel taking out the last cut. On the 1st inst. there remained but 167,681 cubic yards of material in these

two sections which should be finished by the end of November.

Sections I and K—Team work at the east end of Section K was continued with wheel scrapers; 9,223 cubic yards were excavated by this method, an average of 25 yards per scraper per day.

Two steam shovels were employed on each of these sections, the output of which is shown in the following table:

SECTION.	Shifts worked.	No. cubic yards excavated.	Average output per shift.
K.....	106	86,491	816
I.....	50½	32,346	640
Total.....	156½	118,837	759

A force of men and teams were also engaged in trimming the bottom and slopes. On the 1st inst. there remained but 14,849 cubic yards in Section I, which has been completed at this date.

Sections H and G—In addition to the regular plant on Section H a small force of teams and wheel scrapers were employed at the west end of the section. This force excavated 3,065 cubic yards in 96 days, an average of 32 yards per shift.

The steam shovel and incline moved 38,277 cubic yards in 54½ shifts, an average of 702 yards per shift. The Hoover & Mason Conveyor handled 32,545 cubic yards in 48½ shifts, an average of 671 yards per shift. The total output was 73,887 cubic yards. On Section G the total output for the month was 44,163 cubic yards. Of this amount 20,102 yards were moved with the steam shovel and belt conveyor in forty-seven shifts, an average of 428 yards per shift, and 24,061 yards were taken out with the steam shovel and incline, averaging 467 yards for the 51½ shifts employed.

Section F—Work was continued on this section in the usual manner with the two steam shovels and bridge conveyors, which are in good condition and apparently sufficient to do the work. The output for the month was 45,800 cubic yards in eighty-five shifts, an average of 539 yards per shift.

Section E—Forty-one thousand six hundred cubic yards were moved on this section during the month—3,400 with teams and 38,200 with two steam shovels,

averaging about 560 yards each for the sixty-seven shifts employed.

Another steam shovel and incline have been procured to replace the dredge destroyed by fire, and will probably be installed and in operation during the current month.

Section D—Returns and estimates 57,800 cubic yards for the month which were excavated with three steam shovels in 101 shifts—an average of 472 yards per shift. Rock excavation is being continued for drainage purposes for which no estimate is allowed.

Section C—Continued operations with three steam shovels and forces of teams, wagons and wheel barrows. The latter moved 11,000 cubic yards and the steam shovels handled 55,900 yards in 99 shifts, an average of 565 yards per shift, making the total output 66,900 cubic yards for the month.

Section B—Earned an estimate of 62,423 cubic yards for the month, 8,567 yards of which was taken out with teams and the remainder, 53,856 yards, were handled by four steam shovels, averaging 525 yards each for the 102½ shifts employed.

Section A—There has been no improvement in this section since my last report, but on the contrary the estimate is more than 40 per cent less than for the preceding month. The output for August was 36,000 cubic yards; that for September is but 22,900 yards. On the 1st inst. there were 1,587,331 cubic yards remaining in the section. Taking into consideration the unfavorable weather that may be expected for the balance of the season, at the end of the year there will probably remain about 1,500,000 yards to be excavated next year, which would require an output of from 166,666 to 187,500 cubic yards per month for the 8 or 9 months of the year, which is all that can be safely relied on as workable weather. These facts (and figures) plainly show the gravity of the situation.

Section I, though largely in arrears, shows some improvement over the preceding month, the output being 31,900 cubic yards of glacial drift, 9,600 yards of solid rock and 546 cubic yards of retaining wall masonry. The two Brown cantilevers referred to in my last report were not installed until well along into the present month, and as the remaining excavation consists largely of solid rock, which can be readily handled during the winter months, much improvement may be expected from this additional plant.

October 30, |

—2900—

[1895.]

Sections 2 and 4—There is but little glacial drift remaining on these sections and but about 380,000 yards of solid rock, of which nearly 100,000 cubic yards will be required for masonry in the retaining walls to be built next spring, hence excavation has been largely suspended on these sections in order to preserve the stone for masonry purposes.

The output for the month was as follows:

Section 2, 12,000 cubic yards solid rock.

Section 4, 3,900 cubic yards solid rock, 37,800 cubic yards glacial drift.

Section 3—Returns an estimate for the month of 4,500 cubic yards of glacial drift, 43,100 cubic yards of solid rock and 2,800 cubic yards of retaining wall masonry. The section is far in advance of contract requirements and will probably be finished during the present year.

Section 5—Is maintaining a steady improvement. The estimate for the month gives 15,900 cubic yards of glacial drift, 10,900 cubic yards of solid rock and 3,400 cubic yards of masonry in retaining walls.

Section 6—Has practically completed the excavation of glacial drift and had about 275,000 yards of solid rock remaining on the 1st inst. The retaining walls are also well along and may be completed this fall. The output for the month was as follows: Six hundred cubic yards of glacial drift, 24,600 cubic yards of solid rock and 6,100 cubic yards of masonry.

Sections 7 to 13 inclusive—Are all either in advance of contract requirements or completed. Their estimate for the month is as follows:

SECTION.	Glacial Drift Cu. Yds.	Solid Rock Cu. Yds.	Masonry Cu. Yds.
7.....	.....	42,400	400
8.....	.....	28,100	400
9.....	.....	29,600	.....
10.....	5,456	7,467	.....
11.....	.....	41,900	.....
12.....	12,470	19,300	1,300
13.....	.....	5,500	2,247

Section 14—Continues to maintain an excellent rate of progress—more than double its monthly requirement, and the excavation will probably be finished by January 1st, 1896. The estimate for the month gives 6,000 cubic yards of glacial drift and 61,300 cubic yards of solid rock—a total of 67,300 cubic yards.

Section 15—Is also making good progress and may be expected to maintain it. The output for the month was 52,300 cubic yards of solid rock, leaving a balance of about 347,000 yards remaining in the section on the 1st inst.

The total value of the work done during the month (September) was \$564,835.86.

Respectfully submitted,

(Signed)

U. W. WESTON,

Supt. of Construction."

October 30,]

—2901—

[1895.

STATEMENT SHOWING AMOUNT OF WORK DONE DURING THE MONTH
OF SEPTEMBER, 1895—(MAIN CHANNEL).

SECTIONS.	Amount Done During September.	Average Monthly Requirement.	Deficiency Under Monthly Requirement.	Excess Over Monthly Requirement.	Per Cent. of Monthly Requirement.
O.....	\$ 6 430 30	\$ 13,271 42	\$ 6,811 12	.....	49.
N.....	1,518 00	10,674 33	9,156 33	.....	14.
M.....	5 880 70	6,274 34	393 64	.....	94.
L.....	14,499 20	8 682 82	.....	\$ 5 816 38	167.
K.....	23,925 00	11,559 57	.....	12,365 43	207.
I.....	8 075 00	11 398 49	3,323 49	.....	71.
H.....	21,427 23	12,493 57	.....	8,933 66	172.
G.....	12,365 64	15,277 64	2,912 00	.....	81.
F.....	13,511 00	13 493 77	.....	17 23	100.
E.....	11,232 00	23,230 53	11,998 53	.....	48.
D.....	15,280 87	19,215 65	3,934 78	.....	80.
C.....	15,721 50	13,443 10	.....	2 278 40	117.
B.....	16,854 21	12,901 32	.....	3,952 89	131.
A.....	7,007 00	24,012 30	17 005 30	.....	29.
1.....	22,948 50	44 801 03	21,852 53	.....	51.
2.....	9,600 00	20 950 88	11,350 88	.....	46.
3.....	44 376 00	29,177 70	.....	15,198 30	152.
4.....	21,621 54	22 982 67	1,361 13	.....	94.
5.....	23,990 50	18 387 51	.....	5,602 99	130.
6.....	38,068 00	26 827 41	.....	11,240 59	142.
7.....	32,464 00	25 622 15	.....	6 841 85	127.
8.....	22 304 75	21,799 22	.....	505 53	102.
9.....	22,762 40	19,325 00	.....	3,437 40	118.
10.....	7,337 60	22,458 34	15,120 74	.....	33.
11.....	33 205 75	19 455 05	.....	13 750 70	171.
12.....	23 617 42	20,413 93	.....	3 203 49	116.
13.....	11,975 75	21,140 02	9,164 27	.....	57.
14.....	45 949 00	22 648 61	.....	23 300 39	203.
15.....	30,857 00	23,607 65	.....	7,249 35	131.
Totals.....	\$564,835 86	\$555,526 02	\$ 114,384 74	\$123,694 58	101.63

SANITARY DISTRICT OF CHICAGO — ENGINEERING DEPARTMENT.

CLASSIFIED STATEMENT OF EXPENDITURES DURING THE MONTH OF SEPTEMBER, 1895.

CLASSIFICATION.	Eng. Expenses.		Construction.		Total for Month.		Previously Reported.		Total to Date.	
	Salaries.	Supplies, Etc.	Regular.	Extra.	Eng. Expenses	Construction	Eng. Expenses.	Construction	Eng. Expenses.	Construction
Preliminary Sundries.....							\$120,683 75		\$120,683 75	
Locating Route.....							32,222 94		32,222 94	
Borings and Test Pits.....							16,246 50		16,246 50	
Maps, Plans and Specifications.....	\$ 557 50	\$ 31 26			\$ 588 76		35,806 34		36,485 10	
Chicago River Survey.....							17,082 66		17,082 66	
Survey of street lines adjacent to Chi. River.							7,476 32		7,476 32	
Right of Way.....	403 50	12 47			415 97		20,344 56		20,760 53	
Flood Measurements.....	278 00	61 85			339 85		16,688 21		17,028 06	
Disposal of Floods at Joliet.....	383 15	10 03			393 18		22,708 09		33,101 27	
Regular Construction.....	11,272 38	306 56	\$502,205 62		11,068 94	\$502,205 62	295,097 94	\$10,773,715 80	396,766 88	\$11,273,921 42
Extra Work—Main Channel.....								13,455 51	13,455 51	
Extra Work—River Diversion.....							9,723 42	333,993 01	9,723 42	333,993 01
Diversion North Branch Chicago River.....							3,643 51		3,643 51	
Levees, Trestles and Embankments.....						1,102 72	813 75	181,457 60	813 75	182,560 32
Spillway.....							1,754 91	20,518 41	1,754 91	20,518 41
Tow Path.....							5,246 04		5,246 04	
Building Western Stone Company's Bridge.....							1,157 05	10,029 05	1,157 05	19,029 05
Building Stephens Street Bridge.....							985 66	22,329 80	985 66	22,329 80
Building Atchison, Topeka & Santa Fe Bridge.....							770 72	18,738 80	770 72	18,738 80
Building Mt. Forest Foot Bridge.....							32 17		32 17	
Building Western Avenue Temporary Bridge.....	66 30				66 30				66 30	
Repairing and Moving Bridges.....							1,050 13	7,756 19	1,050 13	7,756 19
Office Building at Sag.....							2,339 43		2,339 43	
Saving of Building Sand.....								781 63		781 63
Mortar, Sand and Cement Tests.....	752 40	22 58			774 98					
Saving of Dimension Stone.....							5,736 53		5,736 53	
Erosion Test.....						400 00		10,065 00		10,408 00
Temporary Sanitary Relief.....							1,496 75		1,496 75	
Photographs of Works.....	500 00	28 16			528 16		2,964 28		3,102 44	
Public Reports.....							1,138 14		1,138 14	
Remasurement of Main Channel.....	331 27	911 79			1,243 06		3,972 70		5,215 76	
Effect of Main Channel water on Lake Levels.....	70 00	1 50			71 50		698 38		769 88	
Improvement Chicago River.....	1,420 00	11 44			1,431 44		648 50		2,079 94	
General Account.....	710 00	35 27			745 27		69,775 06		70,550 33	
Totals.....	\$16,474 50	\$1,522 91	\$502,205 62	\$1,502 72	\$17,997 41	\$503,708 34	\$938,622 06	\$11,401,843 80	\$716,619 47	\$11,905,552 23

TABLE OF AMOUNT OF WORK DONE (INCLUDING RIVER DIVER

SECTIONS.	CONTRACTORS.	MAIN CHANNEL.		RIVER DIVERSION.		RUBBLE MASONRY.
		<i>Glacial Drift.</i>	<i>Solid Rock.</i>	<i>Glacial Drift.</i>	<i>Solid Rock.</i>	
		Cubic Yds.	Cubic Yds.	Cubic Yds.	Cubic Yds.	
O	McMahon & Montgomery Co. et al.	643,021				
N	Hayes Bros. et al.	97,400				
M	The Heidenreich Co.	624,800				
L	The Heidenreich Co.	1,033,300				
K	Christie & Lowe	935,200				
I	Christie & Lowe	1,125,000				
H	Gahan & Byrne	435,920				
G	Gahan & Byrne	846,639				
F	Weir, McKechney & Co.	635,793		158,234		
E	Angus & Gindele	857,463		95,718		
D	E. D. Smith & Co.	1,572,800				
C	Western Dredging & Imp't. Co.	1,240,663		162,537		
B	Heldmaier & Neu	1,063,227		212,486		
A	Heldmaier & Neu	989,177		128,288		
1	Griffiths & McDermott	769,066	74,400	5,876		546
2	McArthur Bros.	708,900	279,700	29,516		
3	Gilman & Co.	410,210	616,900			8,800
4	McArthur Bros.	1,040,500	152,300			
5	The Qualey Construction Co.	809,500	140,300			22,500
6	Mason, Hoge & Co.	663,800	274,500	116,700		24,200
7	Mason, Hoge & Co.	172,400	699,400	97,000	41,800	4,200
8	Mason, Hoge, King & Co.	41,600	978,600	56,600	96,900	2,700
9	Halvorson, Richards & Co.	71,700	936,900	37,700	16,000	
10	E. D. Smith & Co.	31,743	1,141,191	30,813	58,276	
11	Mason, Hoge & Co.	44,032	916,300	5,756	11,483	
12	Mason, Hoge & Co.	42,531	954,300	11,739		5,597.44
13	Mason, Hoge & Co.	32,822	1,023,400			9.073
14	Smith & Eastman	355,700	852,400			
15	Wright, Meysenburg, Sinclair & Carry	30,100	292,400			
Totals.....		17,325,007	9,382,991	1,148,463	224,459	77,616.44

Main Channel, glacial drift, including 83,700 cubic yards collateral
 Main Channel, solid rock.....
 River Diversion, glacial drift.....
 River Diversion, solid rock.....
 Rubble Masonry.....

Total amount required to be done October 1st, 1895.....
 Total amount done October 1st, 1895.....

Total amount short as per contracts.....

Total value of work done under contracts October 1st, 1895.....
 Reserved..... { 12½ per cent.....
 { 10 per cent.....

Total value of vouchers paid, including those of October 1st, 1895...
 Total value of vouchers paid for collateral work, including those of

Total disbursement, Construction Account.....

NOTE.—*Overhaul to Levee—Section 1 not included.

SION) AND CONDITION OF WORK ON CONTRACTS, OCT. 1st, 1895.

Total value of work done to Oct. 1st, 1895, on each section.	Total value of work required to be done to Oct. 1st, 1895.	Amounts behind as per contracts.	Amounts ahead as per contracts.	Average monthly progress called for in contracts.	Average monthly progress necessary from July 1st, 1895, to time of completion.	Progress made during month of Sept., 1895.
\$ 134,113 71	\$ 244,222 00	\$ 110,108 29		\$14,366 00	\$ 22,841 19	\$ 6,460 30
22,402 00	181,463 61	159,051 61		10,674 33	23,861 19	1,518 00
135,581 60	112,938 12		\$ 22,643 48	6,274 34	4,128 43	5,880 70
203,560 10	156,290 76		47,269 34	8,682 82	6,004 19	14,499 20
233,800 00	203,072 26		25,727 74	11,559 57	11,731 43	23,925 00
281,250 00	205,172 62		76,077 38	11,398 49	5,061 60	8,075 00
126,416 80	224,884 26	98,467 46		12,493 57	24,985 85	21,427 23
237,058 92	274,997 52	37,938 50		15,277 64	18,749 39	12,365 64
196,142 66	251,806 55	55,663 89		13,493 77	15,934 52	13,511 00
260,183 28	434,108 64	173,925 36		23,230 53	39,921 05	11,232 00
415,809 00	518,822 55	103,013 55		19,215 65	29,540 95	15,280 87
329,752 00	396,784 17	67,032 17		14,695 71	22,031 53	15,721 50
344,442 51	395,214 66	50,772 15		14,637 58	20,879 94	16,854 21
342,223 65	680,476 95	338,253 30		25,202 85	57,128 97	7,007 00
*373,733 46	751,631 14	377,892 68		44,801 03	74,652 70	22,948 50
579,945 98	676,878 72	96,932 74		21,152 46	31,405 39	9,600 00
705,901 70	661,703 10		44,198 60	29,177 70	30,312 19	44,376 00
620,994 54	758,428 11	137,433 57		22,982 67	37,534 95	21,621 54
417,218 50	597,594 08	180,375 58		18,387 51	37,866 87	23,990 50
489,937 50	540,836 41	50,898 91		26,896 13	35,435 40	38,068 00
628,476 00	603,849 64		24,626 36	25,699 42	25,710 70	32,464 00
838,243 25	815,287 02		22,956 23	23,979 03	23,247 48	22,304 75
799,674 10	676,607 82		123,066 28	19,900 23	11,328 29	22,762 40
975,087 60	808,528 50		166,559 10	23,780 25	6,364 03	7,337 60
750,328 90	670,461 98		79,866 92	19,719 47	16,048 13	33,205 75
792,258 37	697,018 36		95,240 01	20,500 54	13,502 66	23,617 42
805,280 72	718,760 68		86,520 04	21,140 02	8,976 03	11,975 75
727,328 00	770,052 74	42,724 74		22,648 61	34,732 92	45,949 00
178,235 00	283,291 80	105,056 80		23,607 65	34,647 27	30,857 00
\$12,945,384 85	\$14,316,184 77	\$2,185,551 40	\$814,751 48	\$565,575 57	\$724,565 04	\$564,835 86

channel.	Cubic Yards.
.....	17,325,007
.....	9,382,991
.....	1,148,463
.....	224,459
.....	77,616.44
.....	\$14,316,184 77
.....	12,945,384 85
.....	\$1,370,799 02
.....	\$12,945,384 85
.....	\$1,603,917 00
.....	85,301 02
.....	1,689,218 02
.....	\$11,256,166 83
October 1st, 1895.	†649,427 00
.....	\$11,905,593 83

†Overhaul to Levee—Section 1 included.

"CHICAGO, Oct. 16, 1895.

Isham Randolph, Esq., Chief Engineer:

DEAR SIR—The work of the Division of Drafting and Designing for the month of September was as follows:

The survey party, engaged in the remeasurement of the Main Channel, has completed work under the direction of Mr. Seymour.

The preparation of plans for regulating works and tail-race was continued; some time was given to the preparation of plans for the improvement of South Branch of Chicago River.

Considerable time was given to miscellaneous hydraulic data pertaining to the Illinois River.

The general surveys were continued, including surveys in the vicinity of the South Fork at Fortieth street, between Kinzie street and Chicago avenue, from C., M. & St. P. main tracks to Wisconsin Division of the C. & N. W. Ry.

The testing of cement for retaining walls was continued, as was also the work of preparing record photographs and the maintenance of water gauges.

The following work was finished: The original drawings and tracings of Chicago River survey maps 7, 8, 9, 10 and 11; a map of the proposed right of way of the C., S. F. and C. R. R., between Summit and Lemont; three maps of the lands of the C., S. F. and C. R. R. north of Joliet; a profile of the St. Lawrence River; one set of excavation tables; two maps of the crossings of Western avenue and the Southwest boulevard; the plat books and sewerage map of Chicago.

Acreages were estimated for the proposed right of way of the C., S. F. and C. R. R.

Platting was continued on the map of the Lower Illinois River; the contour map between Lockport and Joliet, the original and tracing of the contour map of Lockport, the progress profiles of the Main Channel and retaining walls and the watershed map of the Sanitary District.

Work was also done on the tracing and blue prints of the Sanitary District map, the exhibit plans and maps for the Cleveland waterway convention, a table of areas and the index map of the Chicago River survey.

Expenses for October will be approximately the same as for September.

Very respectfully,

(Signed) THOS. T. JOHNSTON,
Assistant Chief Engineer."

FINAL REPORT AND RESIGNATION OF SANITARY INSPECTOR.

The Clerk presented a report from Dr. William Martin, Sanitary Inspector, with reference to sanitary conditions along the Main Channel, and tendering his resignation of his office; and the report was read.

Mr. Eckhart, seconded by Mr. Cooley, moved that the report be ordered printed and referred to the Committee on Health and Public Order.

The motion prevailed unanimously, and the report was ordered printed and so referred.

The following is

THE COMMUNICATION:

"CHICAGO, October 29, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—In making this, which I intend shall be my last, report I shall take occasion to review the work done in this department, and state the conditions existing at the time of assuming charge, which necessitated the appointment of a Sanitary Inspector.

Soon after the inauguration of the work in the fall and winter of 1892, it was discovered that a great deal of sickness was prevalent in the various quarters along the channel where the men were housed and fed. This arose entirely from the wretched sanitary conditions surrounding these places, and was of such a threatening character as to call for prompt action on the part of the Trustees in order to guard against epidemics, which were liable to occur at any moment unless a radical improvement was secured in this respect. Numbers of these places were located in low, swampy spots, abounding in malaria, with no facilities whatever for proper drainage. The bunk-houses were poorly constructed and very much overcrowded. The water was very impure and no adequate provision was made for the proper disposition of camp sewage. As a natural sequence sickness was quite prevalent, and as there was no organized system for the medical care of the laborers, they were in a most wretched condition, were they so unfortunate as to fall ill. After my first thorough inspection of the entire line and the submission of my report, the recommendations therein made were promptly acted upon and a number of sanitary regulations adopted designed to correct the evils to which I had called attention.

Cards on which these rules were printed were ordered to be posted in all of the quarters, and instructions sent to each contractor that these regulations must be rigidly enforced.

Having discovered that there was on law in Illinois bearing on the subject of overcrowding in lodging houses, this Board was instrumental in having the State Board of Health pass a law in which was clearly defined, the minimum air space that each lodger is entitled to, this being the first time in the history of the state that any such regulation was enacted. No provision having been made for the care of the sick and injured among the employes on the work, a plan had to be devised that would meet this requirement. This was done by an assessment of two cents a day on each man for hospital fees, for which sum a number of physicians living along the line contracted to take care of them in hospitals owned by themselves or in the hospitals of Chicago and Joliet, with the authorities of which they had arranged for such treatment. Suitable means of conveyance being employed to transport patients to these various hospitals, this plan has seemed to work well, and has secured good medical and surgical attention at a very trifling cost to the laborers.

By strictly enforcing the regulations in regard to the supply of wholesome water, a proper disposition of camp sewage, overcrowding of bunk houses, and an abundant supply of substantial well-cooked food, we have been successful in keeping the camps free from epidemics of disease, which is always a danger to be apprehended where large bodies of men are being cared for on great works of this character. As proof of our success, I would cite the fact that during the prevalence of small-pox which prevailed in Chicago during the year 1893 and 1894, there occurred on the drainage channel a total of sixteen cases only. This, when we consider the fact that the majority of the laborers that came from the city were accustomed to live in the cheap lodging houses, which were regular hot-beds of contagion, was a very flattering result, and was only achieved by the most thorough, systematic vaccination of all the workmen on the line, compelling them to submit to it or seek employment elsewhere.

Numerous analyses have been made of the drinking water furnished the men, in order to insure the purity of what is usually one of the most prolific causes of

disease. Where such impurities have been detected, prompt measures have been adopted to correct such evils which have resulted in warding off danger from this source.

The work of inspection has been materially aided by the police force of the Sanitary District, who are under orders to report any negligence on the part of the contractors pertaining to sanitary matters. That they do the work well is attested by numerous reports made to me, which are on file in my office.

A great deal of misapprehension seems to exist in the community at large in regard to the powers of the Board of Trustees, as it relates to the control of all matters pertaining to health and public order as applied to the laborers on the canal. It is generally believed that their power is absolute, when the facts are that it is very limited. The law gives them the power of controlling the various camps in regard to keeping them in a proper sanitary condition, but they have no control whatever as regards the care of the sick and injured men, which is a matter resting entirely with the contractor who employs them. Some undeserved criticism has been made of this Board, as well as myself, in connection with this subject, probably through misapprehension on the part of the critics, and not with any design of placing this Board in a false position, for I think that it can be truthfully said that in all matters pertaining to the health, physical and moral well-being of the laborers employed on the channel, the Trustees have ever been thoroughly impressed with their duties and active in the discharge of them. In a work so extensive as this, ideal conditions cannot be maintained in all things, but taken collectively, there is a higher average of conditions favorable to the laborer than was ever known on any public work of corresponding magnitude. I had occasion during the year of the World's Fair to meet travelers from various parts of the world who had seen the other great canals during their period of construction, and they all united in the opinion that our men were better fed, better housed, and in every respect better cared for than anything they had witnessed on the Suez, the Panama, German and Manchester Canals, or on any of our own great railroads.

I cannot conclude this report without expressing my high appreciation of the unvarying courtesy shown to me by each individual member of the Board of Trustees, while an incumbent of this office, and the ready acquiescence to all sugges-

tions I have made which look to the improvement of the sanitary conditions of the quarters where the laborers are cared for. I shall ever esteem it an honor to have been associated with the projectors of this, the greatest sanitary work of all time, a scheme that was magnificent in its conception and that is being carried to a successful conclusion with a rapidity that has excited a world wide admiration, and which promises a happy solution of that most vexatious of all problems with which great municipalities have to deal—a proper disposition of its sewage. Familiar as I have become with the difficulties encountered, as I view it to-day and contrast it as it was a short three years ago, when I made my first trip over the line, which was then but a wild waste of forest, swamp and miles of solid stone, I am vividly impressed with the energy which has been displayed, and have a more realizing sense than ever of the appropriateness of Chicago's forceful and expressive motto, "I Will."

In conclusion I wish to state that, having completed my arrangements for resuming the practice of medicine, my time will be so thoroughly occupied as to preclude the possibility of attending to the duties of this office. As a consequence, this is my last report and my resignation is most respectfully submitted.

(Signed) WILLIAM MARTIN, M. D.,
Sanitary Inspector."

REPORT ON CLAIM FOR DAMAGES FROM
WORK ON WESTERN AVENUE MAIN
CHANNEL CROSSING.

Mr. Kelly, Chairman, presented a report from the Committee on Judiciary, with reference to and accompanied by communication from Wm. E. Mason, being claim for damages arising from the work being done by the District with reference to the Main Channel crossing at Western avenue, presented and referred to that Committee at the meeting held October 9, 1895 (page 2873 of the Proceedings); and the report was read.

Mr. Kelly, seconded by Mr. Altpeter, moved that the report be adopted, ordered printed, and with enclosure, placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT:

"CHICAGO, Oct. 30th, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—Your Committee to whom was referred at the meeting held October 9, 1895 (page 2873 of the Proceedings), the communication from William E. Mason concerning the tearing up of paving and curbing upon a portion of Western avenue, directed the Attorney to reply to same. This has been done with the explanation that the District would replace such portions of the paving and curbing on said avenue as it had found necessary to remove in bringing the approach to the Western avenue bridge down to grade.

As no reply has been made we assume that this is satisfactory to Mr. Mason. We return letter for filing.

Respectfully submitted,

(Signed) THOMAS KELLY,
Chairman.
JOHN J. ALTPETER,
Committee on Judiciary."

(One (1) enclosure.)

PAYMENT OF MATURING BONDS AND
INTEREST ON BONDS.

Mr. Eckhart, Chairman of the Committee on Finance, presented an order, authorizing and directing the Clerk to draw a warrant on the Treasurer, payable to the order of the Treasurer, in the sum of one hundred and forty-five thousand (\$145,000) dollars, to used in the payment of maturing bonds and interest on bonds of the District, and to be drawn from the amount appropriated for such purposes, as provided in the order; and the order was read.

Mr. Eckhart, seconded by Mr. Russell, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Gilmore, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the order adopted, and the Clerk authorized and directed as provided therein.

The following is

THE ORDER:

“Ordered, That the Clerk of this District be and he is hereby authorized and directed to draw a warrant upon the Treasurer payable to the order of Melville E. Stone, Treasurer, for the sum of one hundred and forty-five (\$145,000) dollars, and deliver same to said Treasurer.

Said sum to be drawn from the amount heretofore appropriated for payment of bonds and interest thereon and to be used by said treasurer in the payment of bonds and interest on bonds maturing on the first day of November, 1895, as follows:

First issue of bonds, six months interest.....	\$ 45,000 00
First issue, one hundred bonds.....	100,000 00
Total.....	<u>\$145,000 00</u>

OFFICES TO BE CLOSED “ELECTION DAY.”

Mr. Russell presented an order, directing that the offices of the District be closed on Tuesday, November 5, 1895, the same being “Election Day”—a legal holiday; and the order was read.

Mr. Russell, seconded by Mr. Eckhart, moved the adoption of the order.

The motion prevailed unanimously, and the President declared the order adopted and the offices of the District ordered closed as provided therein.

The following is

THE ORDER:

“Ordered, That the offices of the Sanitary District of Chicago be and the same are hereby ordered closed on Tuesday, November 5, 1895, the same being “Election Day”—a legal holiday.”

CLAIM FOR RENT OF “PRIVATE ROAD”
AT KEDZIE AVENUE.

The Clerk presented a communication, addressed to President Wenter, from P. E. McDonnell, being claim for rent of “private road” at Kedzie avenue.

Mr. Kelly, seconded by Mr. Altpeter, moved that the communication be referred to the Joint Committee on Finance and Engineering without reading.

The motion prevailed unanimously and the communication was so referred.

COMMUNICATION ON PAYMENT OF ESTIMATES ON SECTION 14.

The Clerk presented a communication from Smith & Eastman, contractors for Section 14, with reference to the payment of estimates for work on said section; and the communication was read.

Mr. Eckhart, seconded by Mr. Cooley, moved that the communication be ordered printed and placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE COMMUNICATION:

“CHICAGO, Oct. 25th, 1895.

Hon. Frank Wenter, President Board of Trustees, Sanitary District of Chicago.

DEAR SIR—We most respectfully call your attention to the fact that our estimate due on the 10th of October for work done on Section 14 in September, is just now at hand. As the interest on this estimate of \$21,216.13 since the 10th of October when it should have been paid, amounts to \$53.04, and there is another estimate due today, under our contract, we feel we cannot afford to let these estimates lag back in this way without calling your attention to the matter.

As we have labored under great difficulties in the prosecution of this work and as the lines have been drawn so extremely tight on us by your Honorable Board, even the small matter of interest, which we not mention under ordinary circumstances, becomes an important factor in our attempt to get out even on this work.

Respectfully yours,

(Signed) SMITH & EASTMAN.”

ADJOURNMENT.

On motion of Mr. Gilmore, seconded by Mr. Altpeter, the Board then adjourned.

THOS. F. JUDGE,
Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

NOVEMBER 6, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and eighty-eighth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building. Wednesday, November 6, 1895, at 2 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Kelly, Russell and Wenter—seven (7) members, were present.

MINUTES.

By unanimous consent, action on the minutes of the regular meeting held October 30, 1895, was deferred until the next regular meeting.

VOUCHERS.

The Clerk presented the following vouchers:

PAY ROLLS.

Eng. Dept., Chief Engineer's roll (Oct., 1895).....	\$1,441 67
Eng. Dept., Division of Construction (Oct., 1895).....	5,074 20
Eng. Dept., Division of Drafting and Designing (Oct., 1895).....	2,785 80
Eng. Dept., Division of Records (Oct., 1895).....	954 00
Eng. Dept., Special Service roll (Oct., 1895).....	5,403 25
Eng. Dept., Discharged Men's roll (Oct., 1895).....	536 62
	\$16,195 54
Clerical Dept., Clerk's roll (Oct., 1895).....	891 67

Law Dept., Attorney's roll (Oct., 1895).....	\$ 1,288 34
Law Dept., Joliet roll, (Oct., 1895).....	458 33
	<hr/> \$1,746 67
Treasury Dept., Treasurer's roll (Oct., '95).....	166 67
General Account, General roll (Oct., '95).....	250 00
General Account, Towpath roll (Oct., '95).....	220 00
General Account, Trustees' roll (Oct., '95).....	2,333 34
	<hr/> 2,803 34
Police Dept., Marshal's roll (Oct., 1895).....	4,149 98
	<hr/> \$25,953 87

ENGINEERING DEPARTMENT.

A. H. Abbott & Co., (drafting material)..	\$ 6 75
F. Mayer & Co., (blue printing).....	130 48
W. A. Olmsted, (mounting maps, etc.).....	19 05
Orne Electric Construction Co., (electric fan)	15 35
Treleaven Optical Co., (photo supplies).....	24 00
New York Aristotype Co., (photo supplies)	3 00
Geo. W. Hill, (coal—Corwith office).....	47 25
C. S. Austin, (ice).....	12 00
Chicago Towel Supply Co., (toweling).....	5 40
Isham Randolph, (traveling).....	41 00
W. T. Keating, (traveling).....	18 65
	<hr/> \$ 322 93

CLERICAL DEPARTMENT.

C. S. Austin, (ice).....	\$ 3 00
Warner's Towel Supply, (toweling).....	2 00
	<hr/> \$ 5 00

LAW DEPARTMENT.

Jos. Donnersberger, (Expert—Right of way services, October, 1895).....	\$ 300 00
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GENERAL ACCOUNT.

<i>The Chicago Times-Herald</i> , (advertising regulating works)...	\$ 25 20
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<i>The Tribune Co.</i> , (advertising regulating works).....	\$ 24 90
Victor F. Lawson, publisher <i>The Chicago Record</i> , (advertising regulating works)...	16 80
<i>The Chicago Daily News Co.</i> , (advertising regulating works)	25 20
<i>The Chicago Dispatch</i> , (advertising regulating works).....	16 80
John R. Wilson, publisher <i>Chicago Evening Journal</i> , (advertising regulating works).....	12 60
<i>The Evening Press</i> , (advertising regulating works).....	16 80
<i>The Chicago Daily Sun</i> , (advertising regulating works)...	8 00
<i>Eight-Hour Herald</i> , (advertising regulating works).....	17 00
<i>Illinois Staats Zeitung Co.</i> , (advertising regulating works)	10 50
<i>Freie Presse</i> , (advertising regulating works).....	12 50
<i>The Abendpost Co.</i> , (advertising regulating works).....	9 00
<i>Chicago Arbeiter Zeitung Publishing Co.</i> , (advertising regulating works).....	8 50
<i>Der Republikaner</i> , (advertising regulating works).....	12 50
<i>Svenska Kuriren</i> , (advertising regulating works).....	17 00
	<hr/> \$ 233 30

POLICE DEPARTMENT.

John Larney, (feed)...	\$ 56 40
McArthur Bros. Co., (horse-shoeing).....	5 35
	<hr/> \$ 61 75

Grand total..... \$26,876 85

Mr. Boldenweck, seconded by Mr. Alt-peter, moved that the vouchers, as read

and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Gilmore, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

SPOILING OF MATERIAL EXCAVATED ON SECTION H.

The Clerk presented a report from the Chief Engineer, accompanied by copies of two letters addressed to Gahan and Byrne, Contractors for Section H, directing said contractors to spoil excavated material on said section, on both sides of the channel; and the report was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the report and enclosures be ordered printed and referred to the Committee on Engineering.

The motion prevailed unanimously, and the report and enclosures were ordered printed and so referred.

The following is

THE REPORT, WITH ENCLOSURES:

"CHICAGO. November 6th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I submit for your information, two letters addressed to the contractors for Section H, one dated October 26, the other November 1. These letters set forth a condition which is a serious menace to the safety of the work of this District. The slides which have already occurred have taken place in a period of unprecedented dryness; when this spoil bank and the subjacent soil becomes saturated with water, we may apprehend serious consequences. I have received no reply to either of these letters, and there is no indication of intention on the part of the contractors to comply with my reasonable requirements.

The only means which the Chief Engineer can use to enforce compliance with his orders is the suspension of estimates on the work of the recalcitrant, and with great reluctance I shall be compelled to resort to this extreme measure in protecting the interests of this Dis-

trict in the case now under consideration.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

(Two (2) enclosures.)

(Enclosures.)

(Copy) "CHICAGO, October 26, 1895.

Messrs. Gahan & Byrne, 4209 South Halsted street, City:

GENTLEMEN—The condition of the spoil bank made by the Mason & Hoover Conveyor on Section H is a menace to the safety of the channel. While the sliding which has already taken place is to the northward, there is no reason to believe that it will not later move on the line of the least resistance to the southward. This district has provided spoil area on both sides of the channel, and the plan of the work was that the spoil should be distributed on both sides. It seems, therefore, that you should so arrange your excavation as to meet the plan of the work and relieve the channel of the risk which your present disposition of material puts on it, and yourselves of the responsibility and possible loss growing out of an undue deposit of material upon one side of the channel for which you have no sanction in the contract and no permission from any authorized officer of this district.

The resulting damage to the property on the north of the channel constitutes a claim against you on the part of the owners which, if pressed by them, this district would have to recognize and settle.

Hoping that you will at once rearrange your plan of operations so as to remove this cause of complaint, I am,

Yours truly,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

(Copy) "CHICAGO, Nov. 1, 1895.

Messrs. Gahan & Byrne, 4209 South Halsted Street, City.

GENTLEMEN—Since writing you on the 26th ult., I have heard nothing from you in regard to the subject matter of that letter, nor have I seen any indication of intention or preparation on your part to comply with my suggestions as to the disposition of material from the Mason

& Hoover conveyors on your Contract Section H.

I am therefore compelled to call your attention again to the peril in which this spoil bank places our channel, and I insist that you at once desist from spoiling more than 60 per cent. of the material from the channel excavation on the spoil area provided on the north side thereof, and that you arrange to spoil the remainder of the excavation on the spoil area provided on the south side of the channel. I shall use all of the powers vested in the Chief Engineer by the contract to enforce this order.

Yours very truly,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

MONTHLY REPORT FROM TREASURY DEPARTMENT.

The Clerk presented a report from the Treasury Department for the month of October, 1895; and the report was read.

Mr. Eckhart, seconded by Mr. Kelly, moved that the report be ordered printed and referred to the Committee on Finance.

The motion prevailed unanimously, and the report was ordered printed and so referred.

The following is

THE REPORT:

"Balance on hand at date of last report.....	\$1,101,684.35
Received from County Treasurer, Sanitary District Tax Account. \$200,000.00	
Received from Thos. F. Judge, Clerk, Engineering Account (sale of boring machinery).	115.00
Received from Ft. Dearborn National Bank, interest for October...	370.19
Received from Metropolitan National Bank, interest for October...	377.67
Received from Chicago National Bank, interest for October...	340.75
Received from Globe National Bank, interest for October.....	471.63
Received from National Bank of Illinois, interest for October....	343.00

Received from American Trust and Savings Bank, interest for October	35.66
	<u>\$ 202,053.90</u>
Total cash received for month.....	\$1,303,738 25
Total cash disbursed during month as per annexed schedules, viz:	
Clerical Department....	\$ 896.67
Treasury Department..	166.67
Engineering Department.	17,904 28
Police Department.....	4,479.77
Law Department.....	3,752.20
Law Department—Land Account.	118.64
General Account.....	4,149.13
Bond Interest and Premium Account—	
1st issue b'ds.. \$100,000.00	
1st issue int... 45,000.00	
	<u>145,000.00</u>
	<u>\$ 176,467.36</u>
Balance this date, in banks as per schedule endorsed hereon	*\$1,127,270.89

*Of the \$1,127,270.89 on hand, \$855,000.00 is the balance of the appropriation of \$1,000,000.00 made by ordinance of October 9, 1895, for the payment of District bonds and interest, leaving the net available cash balance this date..... \$272,270.89

(Signed) MELVILLE E. STONE,
Treasurer.
CHICAGO, October 31, 1895."

SCHEDULE:

Metropolitan National Bank.....	\$228,859.95
Globe National Bank.....	248,684.38
Fort Dearborn National Bank.....	226,122.08
National Bank of Illinois.....	201,962.61
Chicago National Bank.....	200,638.08
American Trust and Savings Bank.	21,003.79
Total.....	<u>\$1,127,270.89</u>

ADJOURNMENT.

On motion of Mr. Russell, seconded by Mr. Gilmore, the Board then adjourned.

THOS. F. JUDGE,
Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

NOVEMBER 13, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and eighty-ninth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, November 13, 1895, at 2 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7) members, were present.

MINUTES.

The minutes of the regular meetings held October 30 and November 6, 1895, were approved as printed, on motion of Mr. Kelly, seconded by Mr. Boldenweck.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

The Gunthorp-Warren Printing Company, (printing specifications for regulating works).....	\$ 100 00
The J. M. W. Jones Stationery and Printing Company, (binding Right-of-Way Atlases).....	19 50

Fuller & Fuller Company, (photo supplies).....	\$ 6 30	
Fuller & Fuller Company, (photo supplies).....	1 19	
Walmsley, Fuller & Co. (photo supplies)	9 30	
Vilas Bros. (white lead and oil).....	6 56	
Henry Gebhardt, (repairing furniture)...	2 48	
Seelig & Kandler, (repairing tapes).....	2 65	
Waukesha Hygeia Mineral Springs Company, (water).....	7 50	
Wm. Trinkaus, (expense).....	22 41	
Soper Lumber Company, (oak stakes)...	50 00	
Alex. G. Hug, (repairing typewriter)....	3 15	
Norton & Co. (coal—Lockport office)....	21 00	
John McCaffery, (rent—Brighton Park, October, 1895).....	25 00	
Frank S. Amick, Agent, (rent—Corwith, October, 1895).....	15 00	
J. M. Abbitt, (rent—Willow Springs, October, 1895).....	20 00	
H. S. Norton, (rent—Lemont, October, 1895).....	18 00	
O. W. Moon, (rent—Lockport, October, 1895).....	20 00	
Joseph Carlin, (gauge reading, October, 1895).....	10 00	
E. Hastings, (gauge reading, October, 1895).....	10 00	
Wm. Kirkham, (gauge reading, October, 1895).....	10 00	
Wm. McGinnis, (gauge reading, October, 1895).....	10 00	
Mary Rusk, (gauge reading, October, 1895).....	10 00	
H. B. Alexander, (traveling).....	19 01	
Chas. L. Harrison, (traveling).....	39 68	
Chas. L. Harrison, (traveling).....	77 51	
		\$ 536 24

LAW DEPARTMENT.

Edwards & Hancock, (carbon paper)....	\$ 6 00	
Callaghan & Co. (court reports).....	3 50	
Frank Shepard, (annotations).....	1 50	
*Warner's Towel Supply, (toweling)....	1 50	
C. S. Austin, (ice).....	3 00	
Geo. E. Dawson, (expense).....	37 70	
		\$ 53 20

GENERAL ACCOUNT.

John F. Higgins, (printing Proceedings, October, 1895).....	\$ 147 97	
The <i>Inter Ocean</i> , (advertising regulating works).....	25 20	
John Anderson Publishing Company, publishers <i>Skandinaven</i> , (advertising regulating works).....	12 60	
L. E. Cooley, (expense at Springfield—waterway bill).....	220 20	

Thos. T. Johnston, (expense—Vicksburg Waterway Convention).....	\$ 218 74	
		\$ 624 71

POLICE DEPARTMENT.

Daniel E. Tracy, (horse shoeing).....	\$ 27 10	
W. O. Samson, (carpenter repairs).....	46 05	
		\$ 73 15
Grand total.....		<u>\$1,287 30</u>

Mr. Eckhart, seconded by Mr. Russell, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly (*except as to vouchers for Joseph Carlin, E. Hastings, Wm. Kirkham, Wm. McGinnis and Mary Rusk, \$10.00 each, for gauge reading*), Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

REQUISITIONS.

The Clerk presented the following requisition:

No. 941, Police Department, (car-load of oats)..... \$360 00

Mr. Boldenweck, seconded by Mr. Kelly, moved that Requisition No. 941, for the Police Department, as read and shown above, be allowed.

On roll call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and Requisition No. 941, for the Police Department, as read and shown above, allowed.

MONTHLY REPORT FROM CLERICAL DEPARTMENT.

The Clerk presented a report from the Clerical Department for the month of October, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, November 13. 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have the honor to herewith report that the total amount expended on account of and charged to the Clerical Department during the month of

October, 1895, was \$896.67, divided as follows:

Salaries	\$891 67
General expenses.....	5 00
Total.....	<u>\$896 67</u>

There are no outstanding liabilities, and the expenses for the present month will, from present indications, be about \$950.

The total amount expended and charged to the General Account during the month of October, 1895, was \$5,133.56, divided as follows:

Salaries.....	\$2,786 33
Printing.....	108 53
Rent.....	1,875 00
Telephone service.....	764 17
Vaccine points.....	22 50
Delegates Cleveland Deep Waterways Convention.....	307 96
General expenses.....	269 07
Total.....	<u>\$5,133 56</u>

There are no outstanding liabilities against the General Account, and the expenses for the present month will be about \$4,000.

During the month of October, 1895, there were warrants authorized and drawn against the various accounts for \$198,680.57, as follows:

Engineering Department.....	\$ 18,116 66
Clerical Department.....	896 67
Law Department.....	3,743 95
Treasury Department.....	166 67

General Account.....	\$ 6,133 56
Law Department (Land Account).....	20,118 64
Bond Account (first issue).....	100,000 00
Bond Interest and Premium Account (first issue).....	45,000 00
Police Department.....	4,504 42
Total.....	<u>\$193,851 57</u>

As directed by your Honorable Body at the meeting held October 9, 1895, all estimates issued to contractors and audited, approved and ordered paid by the Board during the month of October, 1895, were paid in tax levy warrants, with six (6) per cent interest coupons attached, drawn against the tax levy for 1895, as follows:

Engineering Department (Construction Account), tax levy warrants.....	\$746,917 73
Which, added to the cash expenditures for the month....	198,680 57
Makes a total expenditure for the month of.....	<u>\$945 598 30</u>

The \$1 000,000 appropriated for the payment of District Bonds and interest on bonds and tax levy warrants, was set aside in pursuance of the ordinance passed by your Honorable Body at the meeting held October 9, 1895, (page 2859 of the Proceedings), which was duly published as provided by law.

From this appropriation the expenditures during October, 1895, were as follows:

Bond and interest appropriation	\$1,000,000 00
Principal, first issue of bonds.....	\$100,000 00
Interest, first issue of bonds.....	45,000 00
	<u>145,000 00</u>
Leaving unexpended balance of appropriation	<u>\$855 000 00</u>

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

MONTHLY REPORT FROM LAW DEPARTMENT.

The Clerk presented a report from the Law Department for the month of October, 1895.

The same was read, and, by unani-

mous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, Nov. 13th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I submit herewith the monthly report for October, 1895.

The total amount paid out by this Department during the month is as follows:

SALARIES.

Attorneys.....	\$ 1,366 67
Office force.....	255 00
	<u>\$ 1,621 67</u>

GENERAL EXPENSES.

Court costs.	\$ 163 00
Right of way.....	425 00
Expense account...	46 58
Legal services.....	1,450 00
Printing and stationery	32 70
	<u>\$ 2,122 28</u>

LAND ACCOUNT.

Taxes (Cook County)\$	118 64
Right of way (for which deeds have passed)	20,000 00
	<u>\$20,118 64</u>
Total.....	<u>\$23,862 59</u>

The purchase of three and thirty six one-hundredths (3.36) acres of land at the northwest corner of Western avenue and the Southwest boulevard from George W. Lay, has been completed.

A bill in chancery has been filed by Michael Guilford against Agnew & Co., Mason, Hoge, King & Co., and the Sanitary District claiming an interest in the work on Section 8 and asking for an accounting. The suit at law begun some months ago, covering essentially the same subject matter, was dismissed at the time of filing said bill.

The attempt to organize the Village of Sag Bridge was finally defeated on submission to the voters of the territory included within the proposed village limits. A detail from our police force was present to preserve order, and it was found necessary to make a few arrests of disturbers of the peace. The disappointment of the saloon element at the failure to organize the village in their interest

manifested itself by the swearing out of warrants against several of our police officers on charges of riot and of assault and battery. The cases have not yet been tried.

Preparations are making for the trial of such of our court cases as are expected to be on call within the next few weeks.

The negotiations which have been for some time under way for the cutting of our channel across the tracks of the Northern Pacific Railroad Company and of the Union Stock Yard & Transit Company, have been concluded, and agreements for such crossings have been prepared containing the same provisions as are contained in the agreement with the Pennsylvania Company.

Respectfully submitted,

(Signed) GEO. E. DAWSON,
Attorney."

CONDITION OF RIVER DIVERSION LEVEES.

The Clerk presented a report from the Chief Engineer with reference to the condition of the River Diversion levees, and asking authority for certain expenditures for bringing the same to grade; and the report was read.

Mr. Boldenweck, seconded by Mr. Cooley, moved that the report be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the report was ordered printed and so referred.

The following is

THE REPORT:

"CHICAGO, Nov. 13th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have made a personal examination of the River Diversion levees, and have to report as follows: The condition of these levees, extending from the high ground north of the Spillway continuously to the west end of Section 5, except on Sections E and 3, where no outer levee has been built, is satisfactory, and leaves nothing to be apprehended from high water. On Sections E and 3 the inner levees afford protection from overflow, except that the cross levee, extending from the west end of the River Diversion levee on Section F to the inner levee on Section E, will need watching in case of extreme flooding.

On Section 6, the work of completing

the levee, in accordance with the terms of the contract, is in progress, and except in a particular point, which equally concerns Section 7, may be considered safe.

The levee on Section 7 is for the greater portion of its length about three feet below grade, and will require about 6,000 yards of material to bring it up to proper height, but in view of the experience on Section 6, the settlement is so great that it should be raised at least three feet above grade. The river face on Section 7 has been ripped in a substantial manner, but the reverse side is exposed to a danger which has been talked of ever since the levee was constructed, but was never considered imminent. This danger is destruction by fire. About three weeks ago the marsh and the spoil in rear of the levee took fire, and in many places the levee itself also caught, both on 6 and 7. After consultation with your officers, I employed a force to ditch between the fire and the levee to head off the fire. I had hoped that our recent rains would have extinguished the fire, but this is not the case, and it is still eating its way through the spoil. I saw one place in the levee on yesterday which had burned to a depth of six feet. It seems proper that the ditch which we have been digging in rear of the levee should be filled with hard, non-combustible material, to save the levee from fire in the future. The cost of protecting Sections 6 and 7 in this way would be about \$4,600, and of raising the grade of Section 7 about \$1,800. We have an unexpended appropriation of \$1,000 (September 5, page 2814 of Proceedings), so that an additional appropriation of \$5,600 would have to be made to cover the work outlined by me.

The levee on Section 8 has been burned in several places on its inner face, but no serious damage has been done, and the cost of putting out the fire is a small item.

The remaining levees are in good, safe condition, until we reach Goose Lake, on Section 11. There, for a distance of about 2,800 feet, the levee is from one foot to a foot and a half below grade. I think that an expenditure of, say \$600, would place this stretch in good repair.

When a rise in the river sets in, Sections 9 and 10 will need to be watched until the work of the muskrats can be located and the holes stopped.

• Respectfully submitted,
(Signed) ISHAM RANDOLPH,
Chief Engineer."

REQUESTS FOR EXTENSION OF TIME ON
CONTRACTS FOR SECTIONS 1, 3,
A, B AND C.

The Clerk presented a report from the Chief Engineer, transmitting communication from Griffiths & McDermott, contractors for Section 1, requesting an extension of time on the contract for said section, as set forth in the communication; and the report and communication were read.

In connection with the same matter, the Clerk presented communications from Gilman & Co., contractors for Section 3; Heldmaier & Neu, contractors for Sections A and B, and The Western Dredging and Improvement Company, contractors for Section C, making similar requests for extensions of time on their respective contracts; and the communications were read.

Mr. Boldenweck, seconded by Mr. Eckhart, moved that the report, with enclosure, and the communications be ordered printed and referred to the Joint Committee on Engineering and Finance to report back to the Board.

The motion prevailed unanimously, and the report, with enclosure, and the communications were ordered printed and so referred.

The following is

THE REPORT, WITH ENCLOSURE, AND THE
COMMUNICATIONS:

"CHICAGO. Nov. 13, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—I transmit herewith a letter received from Griffiths & McDermott, Contractors for Section No. 1, asking for an extension of the time allotted in the contract for completing their contract.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

(One enclosure.)

(Enclosure.)

"CHICAGO, Nov. 12, 1895.

Isham Randolph, Chief Engineer, Sanitary District, Chicago, Ill.:

DEAR SIR—We beg to ask for an extension of time for completing our contract on Section 1, Drainage Canal, of from

four to eight months, as we are somewhat behind on account of the following causes:

1st. The railroad strike of 1894.

2nd. The difficulties we had to contend with on the overhaul work.

3rd. Rock was found much higher than shown on profile, causing considerable delay, as our rock plant had not been arranged for.

Trusting you will be able to grant this request, we are,

Yours truly,

(Signed) GRIFFITHS & McDERMOTT."

The following are

THE COMMUNICATIONS:

"WILLOW SPRINGS, Nov. 13, 1895.

*To the Honorable Board of Trustees of
the Sanitary District of Chicago:*

GENTLEMEN—Owing to the fact that we have struck some seams in our rock which have retarded the laying of our retaining wall to the extent that we will not be able to complete it this winter, and owing to the uncertainty of the time that we will be allowed to commence laying the same in the spring, we would respectfully request that we be allowed to complete our contract on Section 3 any time between April 30th and June 30th, 1896, and that the same be accepted when completed.

Respectfully yours,

(Signed) GILMAN & Co.,
Contractors Section 3."

"MT. FOREST, Ill., Nov. 13, 1895.

*To the Honorable Board of Trustees of
the Sanitary District of Chicago, Rialto
Building, Chicago:*

GENTLEMEN—We beg to ask your Honorable Board for an extension of time for the completion of our contracts for excavating Sections A and B of the Drainage Canal to on or before December 31st, 1896. You are well aware of the difficulties we have had to encounter on these sections, and we trust that you will grant this request.

Yours very respectfully,

(Signed) HELDMAIER & NEU."

"CHICAGO, Nov. 13, 1895.

To the Hon. Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Owing to the large quantities of hard material which we have found on Section C of the Sanitary Canal we have not been able to accomplish as much with our plant as we had expected to do, and do now request that your Honorable Body extend the time for the completion of our Section to December 1st, 1896.

Respectfully yours,

The Western Dredging & Improvem't Co.,

(Signed) By R. B. WALLACE,
President."

REPORT ON AGREEMENTS WITH RECEIVER OF CHICAGO AND NORTHERN PACIFIC RAILROAD COMPANY AND UNION STOCK YARD AND TRANSIT COMPANY FOR MAIN CHANNEL CROSSING AND BRIDGE AT CAMPBELL AVENUE.

Mr. Eckhart, for the Joint Committee on Engineering and Finance, presented a report from that Committee, accompanied by forms of agreement with the Receiver of the Chicago and Northern Pacific Railroad Company and the Union Stock Yard and Transit Company, for bridge and crossing of the Main Channel at Campbell avenue, recommending that said forms of agreement be approved and the President and Clerk authorized and directed to execute the originals thereof on behalf of the District, as provided in the report; and the report was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the report be adopted, with accompanying forms of agreement ordered printed and placed on file, the recommendations made in the report concurred in, and the President and Clerk authorized and directed to execute the originals of said agreements, on behalf of the District, as provided in the report.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Eckhart, Kelly, Russell and Wenter—six(6). Excused and not voting—Mr. Cooley—one (1). Nays—None.

Upon which result the President declared the motion carried, the report adopted, with accompanying forms of agreement, ordered printed and placed on file, the recommendations made in the report concurred in, and the President and Clerk authorized and directed to execute the originals of said agree-

ments, on behalf of the District, as provided in the report.

The following is

THE REPORT, WITH ACCOMPANYING FORMS OF AGREEMENT:

"CHICAGO, Nov. 13, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Committee, in connection with the Chief Engineer and Attorney, have had under consideration agreements for the crossing by our Main Channel of the rights of way of the Chicago and Northern Pacific Railroad Company and of the Union Stock Yard and Transit Company in the vicinity of Western avenue and Thirty-first street.

An understanding has finally been reached with each of these companies upon the same basis as the agreement with the Pittsburgh, Cincinnati, Chicago and St. Louis Railway Company.

The agreement with the Northern Pacific has already been signed in duplicate by the Receiver of that road and that with the Stock Yard Company by its proper officers.

We transmit herewith a copy of each of said agreements and recommend that the form of agreement be approved by your Honorable Body and that the President and Clerk be directed to execute the originals thereof on the part of the District.

Respectfully submitted,

(Signed) B. A. ECKHART,
W. H. RUSSELL,
JOHN J. ALTPETER,
THOMAS KELLY,
WM. BOLDENWECK,

Joint Committee on Engineering and Finance."

(Accompanied by two (2) forms of agreement.)

The following are the

FORMS OF AGREEMENT:

(Chicago and Northern Pacific R. R. Co.)

"*This Agreement, Made this . . . day of A. D. 1895, between A. L. Hopkins, Receiver of the Chicago and Northern Pacific Railroad Company, hereinafter designated said Receiver, as first party, and the Sanitary District of*

Chicago, hereinafter designated the Sanitary District, as second party, witnesseth:

WHEREAS, Said A. L. Hopkins was heretofore appointed Receiver of the Chicago and Northern Pacific Railroad Company, by order of the United States Circuit Court for the Northern District of Illinois, Northern Division, in a suit there pending, in which the Farmers' Loan and Trust Company, *et. al.*, are plaintiffs, and the Chicago and Northern Pacific Railroad Company, *et. al.*, are defendants, and still is such Receiver; and,

WHEREAS, Said court has, by order heretofore entered in said case, authorized such Receiver to execute this contract,

Now, therefore, Said Receiver, in order to give the Sanitary District the opportunity of carrying forward without unnecessary delay the construction of its Main Drainage Channel in the City of Chicago, extending westward from the tracks of said Chicago and Northern Pacific Railroad Company, between Thirty-first and Thirty-third streets, agrees to and does hereby grant permission to said Sanitary District to excavate underneath the tracks of said company at the place above mentioned, a passageway for dredges, tugs and scows, used in the digging of said channel, upon the following terms and conditions:

1. Said opening shall have a width of sixty (60) feet; the tracks of said company to be carried over the opening upon such plan of girders and pile supports as shall be satisfactory to the Chief Engineer of said Receiver.

2. The work in this connection to be done in such manner as shall in no way delay, obstruct or endanger the traffic of said Receiver.

3. That the entire cost of the structure provided to support said company's tracks, also the cost of its maintenance, including the expense of a watchman during its construction and maintenance, shall be paid for by the Sanitary District.

4. It is agreed and understood between the parties that this opening shall be regarded as of a temporary character, to suit the convenience of said Sanitary District in prosecuting the work on its channel without delay, and until proper arrangements can be effected for the construction of a stationary bridge on which to carry the tracks of said company over said channel.

5. It is further understood and agreed

with reference to said stationary bridge, that the same shall be erected by said Sanitary District within two (2) years from the date hereof, at its own exclusive cost, including incidental expenses connected therewith, unless the Sanitary District shall elect to erect within said period of two years in lieu thereof, a draw or movable bridge as provided in paragraph six (6); that it shall be a fixed structure, without draw or other movable parts, not to exceed three hundred (300) feet in length, and built in two or three spans, at the option of said District. The supports of the superstructure of said bridge shall be made of substantial masonry, resting upon pile foundations, the character of all materials composing said foundation and superstructure, also the details of the construction to be acceptable to the Chief Engineer of said Receiver. The design of said bridge, and a specification of all materials intended to be used in the construction of said bridge and foundation, shall be submitted to and approved by the Chief Engineer of said Receiver, before any work shall be begun on said bridge, and the same shall be built in conformity with the standard specifications of said Receiver relating to metallic structures.

Said Receiver agrees to maintain in good order the fixed bridge and the tracks thereon, and the Sanitary District covenants and agrees to pay to said Receiver, immediately upon the completion of the fixed bridge, a sum of money, the interest on which, computed at the rate of five per cent (5%) per annum, shall be sufficient to defray the cost of the maintenance of said fixed bridge, including all ordinary or special repairs of the same, made necessary from any cause whatsoever, and the amount so to be paid by the Sanitary District to said Receiver shall be determined by the Chief Engineer of said Receiver and the Chief Engineer of the Sanitary District. If, however, these representatives of the two contracting parties fail to agree upon the amount, then the sum to be paid shall be determined by a commission of three competent engineers familiar with the maintenance of bridges—one to be appointed by said Receiver, one by the Sanitary District, and the third to be chosen by the two so appointed. The award made by this commission, or a majority of them, shall be accepted by both parties as final and conclusive, and the sum so fixed and determined upon shall be paid to said Receiver within thirty (30) days after the declaration of the award.

6. It is further agreed that the tem-

porary opening herein provided for may be enlarged to the full width of the Main Drainage Channel so soon as the stationary bridge herein specified shall have been constructed; and provided that said bridge shall be so constructed as to carry the tracks of said company across the entire width of the said Main Drainage Channel; that the Sanitary District shall also have the right to further enlarge said channel to meet the requirements of the act organizing said Sanitary District; provided, always, that said Sanitary District shall always, at its own expense, and in such manner as the Chief Engineer of said Receiver may require, extend said bridge to the full width of said enlarged channel, and that when hereafter the Sanitary District, in order to meet the requirements of a navigable waterway, shall determine to replace the fixed bridge herein provided for by a draw or movable bridge, or in case it shall elect to erect within two years from date hereof a draw or movable bridge, in lieu of the stationary bridge provided for in paragraph 5 hereof, then it shall have the right so to do at its own exclusive expense, and provided that such bridge shall, as to design, quality of material, and excellence of workmanship, be first approved in writing by the Chief Engineer of said Receiver, and that at the time of constructing such draw or movable bridge, the Sanitary District shall also, at its own expense, construct a system of interlocking signals to insure the safe and prompt operation of the trains of said Receiver across said bridge, in accordance with plans to be submitted to and approved by the Chief Engineer of said Receiver.

7. The Sanitary District further covenants and agrees, in case of such erection by it of a draw or movable bridge, to pay to said Receiver a sum of money, the interest on which, computed at the rate of five per cent (5%) per annum, shall be sufficient to defray the cost of the maintenance and operation of such draw or movable bridge, including all ordinary or special repairs of same, made necessary from any cause whatsoever, and also the system of interlocking signals herein provided for; the amount so to be paid by the Sanitary District to said Receiver shall be determined by and between the said Receiver and the Chief Engineer of said Receiver and the President and Chief Engineer of the Sanitary District. If, however, these representatives of the two contracting parties shall fail to agree upon the amount, then the sum to be paid

shall be determined by a commission to be composed of five persons familiar with the operation and maintenance of bridges and signals; two to be appointed by said Receiver, two by the Sanitary District, and the fifth to be chosen by the four persons thus appointed. The award made by this commission, or a majority of them, shall be accepted by both parties as final and conclusive, and the sum so fixed and determined upon shall be paid to said Receiver before work of constructing said movable or draw bridge shall be begun, and the same shall be accepted by said Receiver as full compensation and satisfaction for all costs and expenses which may be incurred by it in the maintenance and operation of said draw or movable bridge. It being, however, understood that in the determination of the sum of money, the interest on which computed at the rate of five per cent (5%) per annum shall be sufficient to defray the cost of the maintenance and operation of such draw or movable bridge and the interlocking signals as herein provided, proper credit shall be given to the Sanitary District for any sum of money previously paid to said Receiver upon a similar capitalization for the maintenance of a fixed bridge, as provided under Section 5 of this agreement.

8. And in further consideration of the rights herein conferred by the said Receiver upon the Sanitary District, and as a condition precedent thereto, the Sanitary District hereby agrees that whenever, by deterioration or general insufficiency, it shall become necessary to renew and replace with new structure the whole of any bridge, or of any spans thereof, which said Sanitary District may construct across its channel, which is herein provided to be cut across the right of way of the said Chicago and Northern Pacific Railroad Company, then said Sanitary District shall, at its own expense, erect such new structure, upon a plan satisfactory to the Chief Engineer of the said Receiver. In case of a disagreement between the parties hereto as to the necessity for any such renewal, at the time when the demand therefor is made, the question shall be decided by three competent engineers selected as provided in paragraph five (5) for determining the capitalization of the cost of maintenance of a fixed bridge, the award of whom or any two thereof shall be binding upon the parties hereto.

9. The Sanitary District further agrees that it will reimburse said Receiver promptly for all damages, loss or expense that may be inflicted upon or accrue to

the latter in consequence of any act done by said Sanitary District or any of its contractors, sub-contractors or employes, or either, during the progress of any widening of said channel as the same now or hereafter exists, and during the work of constructing either of the bridges hereinbefore mentioned, to the end that the said Receiver, his successors and assigns may never be subjected to any expense whatever, in consequence of any act done or proposed to be done by the Sanitary District in pursuance of authority hereby granted.

10. All work done under this agreement shall be under the direction and supervision and to the satisfaction of the Engineer of the Receiver. Nothing herein contained shall authorize any changes in the grade of the Railway Company's tracks, without first securing the consent thereto of the said Receiver.

11. This contract shall enure to the benefit of and be binding upon said Receiver and his successors and said Chicago and Northern Pacific Railroad Company, and any person or persons, corporation or corporations, which may purchase said railroad under any decree for the sale of said railroad in the suit wherein the said Receiver was appointed Receiver as aforesaid, and the successors and assigns of the same, and of said Chicago and Northern Pacific Railroad Company, and of said Sanitary District; and whenever in this contract a reference is made to either of the parties hereto, it shall be construed to also include, whenever applicable, a reference to said successors, assigns and purchasers at said sale and their successors and assigns.

IN TESTIMONY WHEREOF, the parties hereto have caused these presents to be executed as of the day and year first above written."

(*Union Stock Yard and Transit Co.*)

"This Agreement, Made this . . . day of A. D. 1895, between the Union Stock Yard and Transit Company, hereinafter designated the Transit Company, as first party, and the Sanitary District of Chicago, hereinafter designated the Sanitary District, as second party,

WITNESSETH, The Transit Company, in order to give the Sanitary District the opportunity of carrying forward, without unnecessary delay, the construction of its Main Drainage Channel in the City of Chicago, extending westward from the Transit Company's tracks, between

Thirty-first and Thirty-third streets, agrees to and does hereby grant permission to said Sanitary District to excavate underneath its tracks at the place above mentioned, a passageway for dredges, tugs and scows, used in the digging of said channel, upon the following terms and conditions:

1. Said opening shall have a width of sixty (60) feet; the tracks of the Transit Company to be carried over the opening upon such plan of girders and pile supports as shall be satisfactory to the Engineer of the Transit Company.

2. The work in this connection to be done in such manner as shall in no way delay, obstruct or endanger the traffic of the Transit Company.

3. That the entire cost of the structure provided to support the Transit Company's tracks, also the cost of its maintenance, including the expense of a watchman during its construction and maintenance, shall be paid for by the Sanitary District.

4. It is agreed and understood between the parties that this opening shall be regarded as of a temporary character, to suit the convenience of said Sanitary District in prosecuting the work on its channel without delay, and until proper arrangements can be effected for the construction of a stationary bridge on which to carry the tracks of the Transit Company over said channel.

5. It is further understood and agreed, with reference to said stationary bridge, that the same shall be erected by said Sanitary District within two (2) years from the date hereof, at its own exclusive cost, including incidental expenses connected therewith, unless the Sanitary District shall elect to erect within said period of two years, in lieu thereof, a draw or movable bridge, as provided in paragraph six (6). That it shall be a fixed structure, without draw or other movable parts, not to exceed three hundred (300) feet in length, and built in two or three spans, at the option of said District. The supports of the superstructure of said bridge shall be made of substantial masonry, resting upon pile foundations, the character of all materials composing said foundations and superstructure, also the details of the construction, to be acceptable to the Engineer of the Transit Company. The design of said bridge and a specification of all materials intended to be used in the construction of said bridge and foundation shall be submitted to and approved by the Engineer of the Transit

Company, before any work shall be begun on said bridge.

The Transit Company agrees to maintain, in good order, the fixed bridge and the tracks thereon, and the Sanitary District covenants and agrees to pay to the Transit Company, immediately upon the completion of the fixed bridge, a sum of money, the interest on which, computed at the rate of five (5) per cent per annum, shall be sufficient to defray the cost of the maintenance of said fixed bridge, including all ordinary or special repairs of the same made necessary from any cause whatsoever, and the amount so to be paid by the Sanitary District to the Transit Company shall be determined by the Engineer of the Transit Company and the Chief Engineer of the Sanitary District. If, however, these representatives of the two contracting parties fail to agree upon the amount, then the sum to be paid shall be determined by a commission of three competent engineers familiar with the maintenance of bridges, one to be appointed by the Transit Company, one by the Sanitary District, and the third to be chosen by the two so appointed. The award made by this commission, or a majority of them, shall be accepted by both parties as final and conclusive, and the sum so fixed and determined upon shall be paid to the Transit Company within thirty (30) days after the declaration of the award.

6. It is further agreed that the temporary opening herein provided for, may be enlarged to the full width of the Main Drainage Channel, so soon as the stationary bridge herein specified shall have been constructed; and provided that said bridge shall be so constructed as to carry the tracks of the Transit Company across the entire width of the said Main Drainage Channel; that the Sanitary District shall also have the right to further enlarge said channel to meet the requirements of the Act organizing said Sanitary District; provided always that said Sanitary District shall always, at its own expense, and in such manner as the Engineer of the Transit Company may require, extend said bridge to the full width of said enlarged channel, and that when hereafter the Sanitary District, in order to meet the requirements of a navigable waterway, shall determine to replace the fixed bridge herein provided for by a draw or movable bridge, or in case it shall elect to erect within two (2) years from the date hereof a draw or movable bridge, in lieu of the stationary bridge provided for in paragraph five (5) hereof, then it shall have the right

so to do at its own exclusive expense; and provided that such bridge shall, as to design, quality of material and excellence of workmanship, be first approved in writing by the Engineer of the Transit Company, and that at the time of constructing such draw or movable bridge, the Sanitary District shall also, at its own expense, construct a system of interlocking signals, to insure the safe and prompt operation of the trains of the Transit Company across said bridge in accordance with the plans to be submitted to and approved by the Engineer of the Transit Company.

7. The Sanitary District further covenants and agrees, in case of such erection by it of a draw or movable bridge, to pay to the Transit Company a sum of money, the interest on which, computed at the rate of five (5) per cent per annum, shall be sufficient to defray the cost of the maintenance and operation of such draw or movable bridge, including all ordinary or special repairs of the same, made necessary from any cause whatsoever, and also the system of interlocking signals herein provided for; the amount so to be paid by the Sanitary District to the Transit Company shall be determined by and between the President and Engineer of the Transit Company and the President and Chief Engineer of the Sanitary District. If, however, these representatives of the two contracting parties shall fail to agree upon the amount, then the sum to be paid shall be determined by a commission to be composed of five persons familiar with the operation and maintenance of bridges and signals; two to be appointed by the Transit Company, two by the Sanitary District and the fifth to be chosen by the four persons thus appointed. The award made by this commission, or a majority of them, shall be accepted by both parties as final and conclusive, and the sum so fixed and determined upon shall be paid to the Transit Company, before work of constructing said movable or draw bridge shall be begun, and the same shall be accepted by the said Transit Company as full compensation and satisfaction for all costs and expenses which may be incurred by it in the maintenance and operation of said draw or movable bridge. It being, however, understood that in the determination of the sum of money, the interest on which, computed at the rate of five (5) per cent per annum, shall be sufficient to defray the cost of the maintenance and operation of such draw or movable bridge and the interlocking signals as herein provided, proper credit

shall be given to the Sanitary District for any sum of money previously paid to the Transit Company, upon a similar capitalization for the maintenance of a fixed bridge, as provided under Section five (5) of this agreement.

8. And in further consideration of the rights herein conferred by the Transit Company upon the Sanitary District, and as a condition precedent thereto, the Sanitary District hereby agrees that whenever, by deterioration or general insufficiency, it shall become necessary to renew and replace with new structure the whole of any bridge, or of any spans thereof, which said Sanitary District may construct across its channel, which is herein provided to be cut across the right of way of the Transit Company, then said Sanitary District shall, at its own expense, erect such new structure upon a plan satisfactory to the Engineer of the Transit Company. In case of a disagreement between the parties hereto, as to the necessity for any such renewal, at the time when the demand therefor is made, the question shall be decided by three competent engineers, selected as provided in paragraph five (5), for determining the capitalization of the cost of maintenance of a fixed bridge, the award of whom, or any two thereof, shall be binding upon the parties hereto.

9. The Sanitary District further agrees that it will reimburse the said Transit Company promptly for all damage, loss or expense that may be inflicted upon or accrue to the latter, in consequence of any act done by said Sanitary District, or any of its contractors, subcontractors or employes, or either, during the progress of any widening of said channel, as the same now or hereafter exists, and during the work of constructing either of the bridges hereinbefore mentioned, to the end that the Transit Company, its successors and assigns, may never be subjected to any expense whatever, in consequence of any act done, or proposed to be done, by the Sanitary District, in pursuance of authority hereby granted.

10. All work done under this agreement shall be under the direction and supervision, and to the satisfaction of the Engineer of the Transit Company. Nothing herein contained shall authorize any change in the grade of the Transit Company's tracks, without first securing the consent thereto of the Transit Company.

IN TESTIMONY WHEREOF, the parties hereto have caused these presents to be executed as of the day and year first above written."

REPORT OF JOINT COMMITTEE ON ENGINEERING AND FINANCE ON SUNDRY MATTERS REFERRED.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by ten (10) enclosures, being sundry documents referred to that Committee at the meetings as set forth in the report, recommending that the same be placed on file; and the report was read.

Mr. Cooley, seconded by Mr. Eckhart, moved that the report be adopted, ordered printed and, with enclosures, placed on file, and the recommendations made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and, with enclosures, placed on file and the recommendations made in the report concurred in.

The following is

THE REPORT:

"CHICAGO, November 13, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Joint Committee on Engineering and Finance returns the following documents, with the recommendation that the same be placed on file:

1. Report of the Chief Engineer in regard to compliance with certain orders passed by the Board, presented and referred to the Committee at the meeting held May 3, 1893 (page 1204 of the Proceedings). No action was required, as the matter submitted was by way of information.

2. Annual Report from the Engineering Department for 1894, presented and referred at the meeting held January 16, 1895 (page 2447 of the Proceedings). The subject matter required no special action by the Board, further than has been recommended by the Committee from time to time.

3. Report of the Chief Engineer, transmitting proposal from the Illinois Dredging Company, representing the contractors for Section N, offering to excavate the auxiliary Channel on said section at a reduced price, presented and

referred at the meeting held April 19, 1895 (page 2616 of the Proceedings). The matter has been the subject of repeated conferences and considerations, and was finally disposed of by action of the Board on the recommendation of the Chief Engineer, at the meeting held October 23, 1895 (page 2894 of the Proceedings).

4. Order directing the Chief Engineer to suspend the gauge reading at various points on and after July 1, 1895, presented and referred at the meeting held May 8, 1895 (page 2633 of the Proceedings), which the Committee deems a matter for the Chief Engineer.

5. Communication from the Beach Gravel and Sand Company, with reference to the tests of sand used in the building of retaining walls, presented and referred at the meeting held June 12, 1895 (page 2673 of the Proceedings). The matter has been inquired into and no action seems necessary.

6. Communication from Norton & Co., with reference to the bridging of the Romeo Road crossing of the Main Channel, presented and referred at the meeting held July 2, 1895 (page 2722 of the Proceedings). The matter was practically disposed of by action taken in regard to temporary bridge trestles at the meeting held July 10, 1895 (page 2728 of the Proceedings).

7. Report of the Chief Engineer with reference to the delinquency of the work of the contractors for Section E, presented and referred at the meeting held July 10, 1895 (page 2729 of the Proceedings). The Committee has had conferences with said contractors and have considered the subject matter, and the Chief Engineer has taken proper action in regard to enforcing the contract.

8. Report of the Chief Engineer, with reference to the temporary bridge and roadway at Western avenue and the Southwest boulevard, presented and referred with power to act at the meeting held August 1, 1895 (page 2758 of the Proceedings). The work has been partially carried out, and your Committee has instructed the Chief Engineer to complete the work as recommended.

9. Two communications from the contractors for Sections N and O, respecting the delay of work on said sections, presented and referred at the meetings held July 24 and October 23, 1895 (pages 2756 and 2894, respectively, of the Proceedings). Your Committee has given full consideration thereto, in con-

junction with the Attorney and Chief Engineer, and are persuaded that all action taken on behalf of this District has been well within the provisions of the contract.

Respectfully submitted,

(Signed) L. E. COOLEY,

Chairman.

B. A. ECKHART,
WM. BOLDENWECK,
W. H. RUSSELL,
THOMAS KELLY,
JOHN J. ALTPETER,

Joint Committee on Engineering and Finance."

(Ten enclosures.)

REPORT ON ORDINANCES FOR SUMMIT AND WILLOW SPRINGS CROSSINGS, NORTHERN PACIFIC (CALUMET TERMINAL) CROSSING OF RIVER DIVERSION AND CONDITION OF DESPLAINES RIVER BRIDGE AT WILLOW SPRINGS.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by report of the Attorney, transmitting ordinances passed for highway crossings at Willow Springs and Summit, presented and referred to that Committee at the meeting held December 13, 1893, (page 1613 of the Proceedings) recommending that the ordinance for crossing at Summit be accepted; said report also returning for filing report of the Chief Engineer concerning the Northern Pacific (Calumet Terminal) bridge across the River Diversion and two communications from the Village Clerk of Spring Forest, Illinois, concerning the condition of the Desplaines River bridge at Willow Springs, presented and referred to that Committee at the meetings as set forth in the report; and the report was read.

Mr. Cooley, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed and, with enclosures, placed on file, and the recommendations made in the report concurred in.

On roll call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and, with enclosures, placed on file, and the recommendations made in the report concurred in.

The following is

THE REPORT:

"CHICAGO, Nov. 13, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—In regard to the report of the Attorney, enclosing copies of the ordinances passed by the Villages of Summit and Spring Forest for highway crossings at Willow Springs and Summit, presented and referred to the Joint Committee on Engineering and Finance at the meeting held December 13, 1893, (page 1613 of the Proceedings) your Committee reports as follows:

The ordinance, with respect to the crossing at Willow Springs, does not now seem to be in harmony with any present conditions, and we recommend that the same be placed on file. The ordinance, in regard to the highway and crossing of the Main Channel and the river at Summit, is in the nature of a permit, and should be accepted by the Board, and your Committee so recommend.

The report of the Attorney and accompanying ordinances are returned herewith for filing.

In regard to the report of the Chief Engineer upon the subject of the Calumet Terminal bridge across the River Diversion below Summit, presented and referred to the Committee at the meeting held March 7, 1894, (page 1804 of the Proceedings) your Committee reports that the subject was taken up with a view to meeting an emergency by action of the Board at the meeting held April 11, 1894, (page 1859 of the Proceedings) and the bridge and approaches were raised some three feet.

No further action seems required until the entire question of the crossing of both the Main Channel and the river is taken up for final settlement, and your Committee therefore returns the report of the Chief Engineer for filing.

In regard to the communications from the Village Clerk of Spring Forest, Illinois, calling attention to the condition of the Willow Springs bridge over the Desplaines River, presented and referred at the meetings held May 29th and August 29, 1894, (pages 1975 and 2163, respectively, of the Proceedings), your Committee has had the matter under advisement, and directly and through the Attorney has had several conferences with the parties in interest.

We have been disposed to consider

some material changes in regard to this crossing, but thus far we have been able to make no arrangement which we could recommend to the Board. We therefore return the communications for filing.

Respectfully submitted,

(Signed) L. E. COOLEY,
Chairman.

B. A. ECKHART,
W. H. RUSSELL,
JOHN J. ALTPETER,
THOMAS KELLY,
WM. BOLDENWECK,

Joint Committee on Engineering and Finance."

(Four (4) enclosures).

REPORT ON FINAL REPORT AND RESIGNATION OF SANITARY INSPECTOR.

Mr. Altpeter, for the Committee on Health and Public Order, presented a report from that Committee, with reference to and accompanied by report and resignation of Dr. William Martin, Sanitary Inspector, presented and referred to that Committee at the meeting held October 30, 1895, (page 2905 of the Proceedings) recommending that said resignation be accepted, to take effect December 1, 1895; and said report also returning for filing a resolution and another report of the Sanitary Inspector presented and referred to the Committee at the meetings as set forth in the report; and the report was read.

Mr. Altpeter, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed and, with enclosures, placed on file and the recommendations made in the report concurred in.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT:

"CHICAGO, Nov. 13, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—Your Committee on Health and Public Order, to whom was referred at the meeting held October 30, 1895 (page 2905 of the Proceedings), the report of Sanitary Inspector, Dr. William Martin, wherein, by reason of wishing to resume private practice, he tenders his resignation as such Inspector, respectfully report as follows:

Your Committee, at the inception of the work upon the Main Drainage Channel, recognized the necessity of providing for efficient supervision of the camps, buildings and accommodations furnished to employes engaged upon the work.

They foresaw that the aggregation of such large numbers of men in quarters of a temporary character would be a menace to the communities where they were located, unless strict regulations in regard to the care of dormitories, the securing of sufficient quantities of wholesome and well cooked food, and the furnishing of an abundant supply of pure water, were made and enforced.

To this end, so soon as the contractors began to locate upon the various sections, your Committee recommended the employment of Dr. Martin as Sanitary Inspector (Proceedings, 927), and he was accordingly so appointed.

With his assistance, proper regulations were drafted, were adopted by your Honorable Body and put into effect.

Since then, the work of supervision has been carried forward as set out in detail in Dr. Martin's report.

Your Committee wish in this connection to express their appreciation of the capable and efficient manner in which Dr. Martin has performed the duties of his office, and to acknowledge the assistance which he has been to them in the matters committed to their charge.

The various camps upon the line of the work have become so well organized, and have become so habituated to the observance of the sanitary regulations adopted by the District, and the number of men employed is now so rapidly diminishing, through the completion of the sections, that, with the aid of the Police Department, which is already accustomed to the work, it will not, in the opinion of your Committee, be necessary for the future to continue the office of Sanitary Inspector. Should any emergency arise, it could easily be provided for. To the end that such further service as may be necessary may be rendered by Dr. Martin before his retirement, in organizing a system of inspection by the Police Department that shall be efficient under ordinary conditions, we recommend that his request to be permitted to sever his connection with the District be acceded to and his resignation accepted, to take effect, however, December 1, 1895.

We also recommend such changes in the rules of the Board as shall be neces-

sary to carry into effect the recommendations here made.

The report, together with resolution referred October 31, 1894 (page 2230 of the Proceedings), and report referred June 5, 1895 (page 2660 of the Proceedings), is returned for filing.

Respectfully submitted,

(Signed) JOHN J. ALTPETER,
RICHARD PRENDERGAST,
Committee on Health and Public Order."

REPORT ON "INTERNATIONAL DEEP
WATERWAYS CONVENTION" AT
CLEVELAND.

Mr. Boldenweck, for the delegation appointed to attend the International Deep Waterways Convention held at Cleveland, Ohio, September 24, 25 and 26, 1895, presented a report with reference to said convention; and the report was read.

Mr. Boldenweck, seconded by Mr. Eckhart, moved that the report be adopted, ordered printed and placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT:

"CHICAGO, Nov. 13, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—By authority of the Board of September 11, 1895 (page 2s29 of the Proceedings), the following delegation was appointed to represent the District at the International Deep Waterways Convention, held at Cleveland, Ohio, on September 24, 25 and 26, 1895:

Frañk Wenter, President of the Board of Trustees.

Wm. Boldenweck, Chairman Committee on Federal Relations.

Lyman E. Cooley, Chairman Committee on Engineering.

George E. Dawson, Attorney of the District.

Isham Randolph, Chief Engineer of the District.

Thos. T. Johnston, Assistant Chief Engineer of the District.

In addition, Assistant Engineer E. J. Ward was sent by the Chief Engineer, in direct charge of an exhibit illustrating

by maps and photographs, the works of the District.

The object of the convention was to consider specifically the subject of ocean navigation into and through the Great Lakes. Topics were assigned covering the subject in its broad relations from the international, commercial and technical points of view, and papers were prepared in advance by experts upon the several subjects, as a basis for discussion.

The convention was thoroughly representative of lake and seaboard interests from both sides of the boundary line and was composed of men of special attainment upon the various subjects, and in effect was a congress of specialists assembled to discuss propositions rather than to urge a predetermined plan. The broad interest in the matter was shown by delegations from Manitoba, Dakota, Iowa, Pennsylvania, New York, New England and Quebec, as well as from the States and Provinces immediately contiguous to the lakes, and also by the fact that the Dominion of Canada and the United States were officially represented through officers of the technical service.

Matters connected with the Chicago Canal and its effect on lake levels were given much attention and were treated in a broad and liberal spirit. The papers brought out on this subject will be valuable additions to our stock of information.

Altogether, your delegation believes that this convention will bear fruit, and that the object thereof—viz., ocean navigation into and through the lakes—will ultimately be realized, and that Chicago will be the greatest beneficiary of any such work. We feel also that the presence of your delegation tended to relieve any undue apprehension in regard to the effect of our canal on lake levels.

The proceedings of this convention will be of very great value to all interested in the subject and particularly to this District, as they contain much matter having a more or less direct relation to its work, and we think the District may properly extend its material support.

Very respectfully submitted,

(Signed) FRANK WENTER,
President Board of Trustees.

WM. BOLDENWECK,
Ch'n Com. on Federal Relations.

L. E. COOLEY,
Ch'n Committee on Engineering.

GEO. E. DAWSON,
Attorney.

ISHAM RANDOLPH,
Chief Engineer.

THOS. T. JOHNSTON,
Assistant Chief Engineer."

REPORT ON "WESTERN WATERWAYS CONVENTION" AT VICKSBURG.

Mr. Cooley, appointed to represent the District at the "Western Waterways Convention," held at Vicksburg, Mississippi, October 22 and 23, 1895, presented a report with reference to said convention; and the report was read.

Mr. Cooley, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed and placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT:

"CHICAGO, Nov. 13, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Pursuant to the authority of the Board of October 9, 1895 (page 2873 of the Proceedings), I attended the Western Waterways Convention, held at Vicksburg, Mississippi, on October 22 and 23, 1895, accompanied by Mr. Thomas T. Johnston, Assistant Chief Engineer, in charge of an exhibit of maps and photographs illustrative of the works of the District.

The convention was especially representative of the interests concerned in the improvement of navigation below St. Louis, and the protection of alluvial lands below Cairo, and was composed of able men. It was also generally representative of the entire Western Waterways system, and contained good delegations from the Ohio and Upper Mississippi cities, and especially from the lower tributaries of the Mississippi. The Chicago Board of Trade was also represented. The Mississippi River Commission and the several districts were present through representatives and engineers to give any information that might be of interest.

Altogether the proceedings were intelligent and harmonious, and calculated to have weight with public sentiment and with Congress.

The exhibit of the District was given a prominent place adjacent to the convention hall, and was generally visited and studied. One evening was given over to the subject of connecting the lakes with the Mississippi River, during which Mr. Johnston exhibited the works of the District, and explained the same from lantern views, and your representative talked upon the future

development of the route through the Mississippi valley. The relations of our work to the Mississippi were very generally discussed, both on the sanitary and commercial side, in the lobbies and among the delegates, and finally the following resolution was passed without objection from any quarter:

'Resolved, That this convention heartily sympathizes with the efforts of the Deep Waterways Association of the Northern Lakes in regard to the extension of ocean navigation into and through these inland seas, and that the project for connecting the Great Lakes with the Mississippi River, now being prosecuted under the authority of the State of Illinois, is a matter of earnest congratulation and is deserving of the co-operation of the Federal Government.'

Altogether, I think that the participation of the District in this convention has borne fruit, and I believe that the District should keep in touch with all efforts for the improvement of navigation through the Mississippi River and about the Great Lakes.

Very respectfully submitted,

(Signed)

L. E. COOLEY."

DEDUCTION OF HOSPITAL DUES FROM
WAGES OF EMPLOYEES ON MAIN
CHANNEL.

Mr. Kelly presented an order with reference to limiting the deduction of hospital dues from the wages of employees on the Main Channel to those employed over one-half month; and the order was read.

Mr. Kelly, seconded by Mr. Boldenweck, moved that the order be ordered printed and referred to the Committee on Labor.

The motion prevailed unanimously and the order was ordered printed and so referred.

The following is

THE ORDER:

"WHEREAS, Complaints have reached the Board of Trustees that it is the practice on some sections of the work for contractors to deduct from the wages of their men fifty cents per month as hospital dues, and that such amount is taken even where a man is employed for but two or three days, and that the men, in case of accident, are frequently either insufficiently cared for or not cared for at all; now, therefore, be it

Ordered, That the contractors be re-

quested to make no deductions from the wages due the men in their employ for hospital service, except where the men have been employed at least one-half month, and that no deductions whatever from wages be made except where contractors have made adequate and permanent arrangements for the care of the sick and disabled workmen under their employment."

CLAIM FOR WORK ON LEVEE AND
TRESTLE ON SECTION A.

The Clerk presented a communication from Heldmaier & Neu, contractors for Section A, making claim for work on the levee and trestle on said section, report on which was presented at the meeting held October 10, 1894. (page 2253 of the Proceedings); and the communication was read.

In connection with this matter, the Chief Engineer was called upon and made a verbal statement to the effect that the said work was unauthorized and was west of the limit set for the work of these contractors on Section A, as shown in the previous report.

Mr. Boldenweck, seconded by Mr. Cooley, moved that the communication be ordered printed and placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE COMMUNICATION:

"MT. FOREST, Ill., Nov. 13, 1895.

The Honorable Board of Trustees of the Sanitary District of Chicago, Rialto Building, City:

GENTLEMEN—We beg to respectfully draw your attention to our claim on account of re-construction of the trestle below Station 710, between the River Diversion and the Main Channel of the Drainage Canal, which we filed with the Board of Trustees September, 1894.

You will remember that the Financial Committee took the matter up and rejected payment of same; you will also remember that the condition of this trestle was such that repairs were impossible and that re-construction was absolutely necessary in order to continue filling, and almost directly after we had gone to the expense and trouble of doing this work we received orders from you to discontinue filling up the trestle at that point, consequently we derived no benefit whatever from the above mentioned work, and that the Sanitary District certainly did; in view of the above

facts we feel that you cannot but admit the justice of our claim.

Yours respectfully,

(Signed) HELDMAIER & NEU."

CLAIM OF PROVIDER COMPANY FOR BOARDING EMPLOYEES ON SECTION 14.

The Clerk presented a communication from the Provider Company, being claim for board said to have been furnished employes on Section 14; and the communication was read.

Mr. Boldenweck, seconded by Mr. Alt-peter, moved that the communication be ordered printed and referred to the Joint Committee on Judiciary and Finance.

The motion prevailed unanimously, and the communication was ordered printed and so referred.

The following is

THE COMMUNICATION:

"OFFICE OF PROVIDER COMPANY, }
106 Washington Street. }
CHICAGO, Nov. 12, 1895. }

To the Trustees of the Sanitary District of Chicago:

GENTLEMEN—On the first day of January, 1895, acting for the Provider Company, an Illinois corporation duly organized, I began prosecution of a contract with Dion Geraldine to board his employes on Section 14 of the Drainage

Canal, said Geraldine being a contractor under Smith & Eastman for removing the rock after blasting and loading.

By mutual consent, this contract was terminated May 7, 1895, and I was induced by said Geraldine to accept his notes, aggregating eight hundred and eighteen and 82-100 dollars, in full settlement of the account due by him at that date, the same representing money that said Geraldine had collected from his men for board and which he should have turned over to this company.

We have made diligent efforts to collect these notes, but not the slightest attention has been paid to our demands, and although, as I am credibly informed, Mr. Geraldine's profits have been very heavy, he has succeeded in evading payment, and I earnestly request that your Board will take such action as you can to aid us in the collection of this debt.

Respectfully,

(Signed) ROBT. GREER,
President Provider Company."

ADJOURNMENT.

On motion of Mr. Eckhart, seconded by Mr. Russell, the Board then adjourned.

THOS. F. JUDGE,
Clerk.

Edmund J. Wenter
Secy

PROCEEDINGS
 —OF THE—
 BOARD OF TRUSTEES
 —OF THE—
 SANITARY DISTRICT OF CHICAGO.

NOVEMBER 20, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
 of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and ninetieth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, November 20, 1895, at 2 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Eckhart, Kelly, Russell and Wenter—five (5) and subsequently Mr. Cooley, making a total of six (6) members, were present.

MINUTES.

The minutes of the regular meeting held November 13, 1895, were approved as printed, on motion of Mr. Boldenweck, seconded by Mr. Russell.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

Emil Biorn, (pen drawings).....	\$	13 75
Blomgren Bros. & Co., (half-tone engravings).....		10 00
	\$	23 75

CLERICAL DEPARTMENT.

H. J. Armstrong & Co., (printing).....	\$	12 25
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LAW DEPARTMENT.

Henry Gebhardt, (vault fittings).....	\$ 2 03	
Waukesha Hygeia Mineral Springs Com- pany, (water).....	3 75	
Chicago Telephone Co., (toll service)....	8 15	
		\$ 13 93

GENERAL ACCOUNT.

<i>The Engineering News Publishing Com- pany, (advertising regulating works)</i> ..	\$ 129 60	
<i>The Railway R view, (advertising reg- ulating works)</i>	114 24	
<i>The Railway Age, (advertising regulat- ing works)</i>	97 50	
<i>Railroad Gazette, (advertising regulat- ing works)</i>	60 00	
<i>The Chicago Chronicle Company, (legal advertisement of regulating works)...</i>	504 00	
<i>The Chicago Chronicle Company, (le- gal advertisement appropriation or- dinance).....</i>	5 60	
Thos. F. Judge, (expense).....	14 80	
		\$ 925 74

POLICE DEPARTMENT.

Ogden, Sheldon & Co., (rent, Forty- eighth street and Hyman avenue, to March 31, 1896).....	\$ 50 00	
Bohanon Carriage Company, (repairs to carriages).....	40 15	
Edward Williams, (expense).....	136 63	
		\$ 226 78
Total.....		\$1,202 45

ENGINEERING DEPARTMENT.

*Construction Account—

Griffiths & McDermott, (Sec. 1, Nov. 1, 1895).....	\$ 7,741 47
McArthur Brothers, (Sec. 2, Nov. 1, 1895)	5,311 25
Gilman & Company, (Sec. 3, Nov. 1, 1895)	17,105 38
McArthur Brothers, (Sec. 4, Nov. 1, 1895)	4,838 75
The Qualey Construction Co., (Sec. 5, Nov. 1, 1895).....	14,647 94
Mason, Hoge & Company, (Sec. 6, Nov. 1, 1895).....	12,264 00
Mason, Hoge & Company, (Sec. 7, Nov. 1, 1895).....	15,775 38
Mason, Hoge, King & Co., (Sec. 8, Nov. 1, 1895).....	11,249 88
Halvorson, Richards & Co., (Sec. 9, Nov. 1, 1895).....	3,101 71
Mason, Hoge & Company, (Sec. 11, Nov. 1, 1895).....	16,295 78
Mason, Hoge & Company, (Sec. 12, Nov. 1, 1895).....	13,135 61
Mason, Hoge & Company, (Sec. 13, Nov. 1, 1895).....	1,467 59

CLAUSE "J"

Total Retained.	Amount re- leased on this Voucher
\$14,613 96	\$ 85 00

		CLAUSE "J"	
		Total Retained.	Amount re- leased on this Voucher
Smith & Eastman, (Sec. 14, Nov. 1, 1895)	\$ 19,512 50		
Wright, Meysenburg, Sinclair & Carry, (Sec. 15, Nov. 1, 1895).....	12 949 13		
Heldmaier & Neu, (Sec. A, Nov. 1, 1895).....	9,270 65	\$26,437 03	\$ 147 92
Heldmaier & Neu, (Sec. B, Nov. 1, 1895).....	4,914 00	8,759 01	275 94
Western Dredging & Improvement Co., (Sec. C, Nov. 1, 1895).....	4,503 19		
E. D. Smith & Co., (Sec. D, Nov 1, 1895).....	3 053 54		
Angus & Gindele, (Sec. E, Nov. 1, 1895).....	4,819 50	6,615 00	
Weir, McKechney & Co., (Sec. F, Nov. 1, 1895).....	4,775 31		
Gahan & Byrne, (Sec. G, Nov. 1, 1895)...	6 862 45	7 831 60	1,152 20
Gahan & Byrne, (Sec. H, Nov. 1, 1895)...	11,051 47	7,167 64	
Christie & Lowe, (Sec. I, Nov. 1, 1895)...	1 246 87		
Christie & Lowe, (Sec. K, Nov. 1, 1895)...	12,950 00	975 00	400 00
The Heidenreich Company, (Sec. L, Nov. 1, 1895).....	4,385 40	246 25	949 54
The Heidenreich Company, (Sec. M, Nov. 1, 1895).....	5,120 93	961 31	1,058 79
Hayes Bros , et al. (Sec. N, Nov. 1, 1895)	1,998 42	2,776 10	
McMahon & Montgomery Co. et al. (Sec. O, Nov. 1, 1895).....	3,986 18	2,329 37	
Mason, Hoge & Co., (Sec. 7, Extra work— Dimension stone, rip-rap work, earth core and embankment, Nov. 1, 1895)...	100 00		
Isham Randolph, (Sec. 9, removing West- ern Stone Company trestle, Nov. 1, 1895— <i>Supplementary final</i>).....	17 30		
Total.....		\$234,461 58	
Grand total.....		\$235,664 03	

*Paid by warrants, with interest coupons attached, drawn against the tax levy of 1895.

Mr. Kelly, seconded by Mr Eckhart, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Eckhart, Kelly, Russell and Wenter—five (5). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and ordered paid.

REQUISITIONS.

The Clerk presented the following requisition:

No. 942, Police Department, (hay) \$200 00

Mr. Eckhart, seconded by Mr. Kelly, moved that Requisition No. 942, for the Police Department, as read and shown above, be allowed.

On roll call the vote stood: Yeas—Messrs. Altpeter, Eckhart, Kelly, Russell and Wenter—five (5). Nays—None.

Upon which result the President declared the motion carried, and Requisition No. 942, for the Police Department, as read and shown above, allowed.

PROPOSITION FOR FURNISHING OF PROCEEDINGS OF CLEVELAND "DEEP WATERWAYS CONVENTION."

The President presented a message, transmitting communication from Frank A Flower, Secretary of the International Deep Waterways Association, making proposition for the furnishing of copies of the proceedings of the "Cleveland

Deep Waterways Convention," as set forth in the communication; and the message and accompanying communication were read.

Mr. Eckhart, seconded by Mr. Kelly, moved that the message and accompanying communication be ordered printed and referred to the Joint Committee on Engineering and Finance, with instructions to report back to the Board at the next regular meeting.

The motion prevailed unanimously, and the message and accompanying communication were so referred.

The following is

THE MESSAGE, WITH ACCOMPANYING COMMUNICATION:

"November 20th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I transmit herewith a letter addressed to me by Mr. Frank A. Flower, Secretary of the International Deep Waterways Convention, recently held at Cleveland. You were represented at that convention by a delegation of your members and officers, since it was known that the subject of the effect of our work upon the lake levels would be discussed, and might have an important bearing upon the interests of the Sanitary District. The delegation, in its report made to your Honorable Body at its last meeting, have directed your attention to the broad and liberal spirit in which the whole matter was discussed, and of the great value to the District of the published proceedings, if at any time the subject matter should be brought before Congress, which it seems almost certain will be the case.

I believe that the District can in no other way secure such valuable aid at so slight an expense, as by taking advantage of the opportunity offered to obtain copies of said proceedings. I accordingly present the matter for your consideration.

Very truly,

(Signed) FRANK WENTER,
President."

(One (1) enclosure.)

The following is

THE COMMUNICATION:

"CLEVELAND, Ohio, Nov. 19th, 1895.

MY DEAR SIR—I have set aside 500

copies of our proceedings for the use of the Chicago Sanitary District.

The entire subject of lake levels, from all possible points of view, is fully discussed in the volume, over fifty pages being devoted to that subject. It is needless for me to say here that practically everything of this kind in the volume is favorable to Chicago.

The matter, of course, will come before Congress, and it seems to me that our volume will enable every member to arrive at a correct understanding of the subject, and induce him to vote properly upon it.

By dark to-night every Senator and Congressman, except, perhaps, those on the Pacific coast, will have received a copy of the volume. The next thing is to place them in the hands of leading newspapers and in all the great public libraries. The postage is thirteen cents each, or \$130 per thousand, which must be paid in advance.

We conceived a scheme for dividing up the cost of publication and distribution. It is this: Ask each locality to contribute a share equal to its proportion of space occupied in the volume. That, of course, pushes Chicago up to a pretty high notch. The Canadians propose to liquidate their share by selling the volume at \$2.00 per copy. We can come out whole at eighty cents per copy, including postage. As there will be no postage on the share sent to you in bulk, we would be whole on these 500 copies at fifty cents each.

As a large number of the members and officers of the Sanitary District were present in Cleveland, further explanations are not required. The volume contains 465 pages, with maps and drawings showing lake level effects, and contains seven or eight articles bearing directly on your interests.

If you feel able, we shall be gratified if you can appropriate \$500 towards these expenses, but we shall be satisfied if you take 500 copies at sixty cents per volume.

All bills are now due and payable, so that whatever you may do will help us most if done quickly.

Very respectfully yours,

International Deep Waterway Ass'n.

(Signed) FRANK A. FLOWER,
Secretary.

Hon. Frank Wenter, Chicago, Illinois, Rialto."

PAYMENT OF 1895-96 SUBSCRIPTIONS TO
DISTRICT TELEPHONE SYSTEM.

The Clerk presented a report, accompanied by receipt from Treasurer Stone for \$950, being in full of moneys received by him from nine (9) parties for one year's (1895-96) use of the District telephone system, as set forth in the report and accompanying receipt; and the report was read.

Mr. Eckhart, seconded by Mr. Russell, moved that the report be adopted, and, with accompanying receipt, ordered printed and placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT, WITH ACCOMPANYING RECEIPT:

"CHICAGO, Nov. 20, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have to report to your Honorable Body that I have collected from the six contractors using the District telephone system the sum of eight hundred (\$800) dollars, for the term from August 14, 1895, to August 14, 1896, the same being from the same parties as noted in my report presented November 14, 1894 (page 2292 of the Proceedings), except in the case of E. D. Smith & Co., whose telephone on Section 10 was removed at their expense to Section D, and Section 10 being completed, their claim for a reduction of \$100 in the amount of their payment was allowed.

From August 14, 1895, to August 14, 1896, three firms subscribed, paying fifty (\$50) dollars per annum each for the use of the system, the Sullivan Machinery Company and Jones & Laughlins, Limited, not renewing their leases.

In conformity with directions contained in the report of the Joint Committee on Finance and Engineering, adopted at the meeting held October 14, 1894 (page 2277 of the Proceedings), I have deposited with the Treasurer, in full of the above, the sum of nine hundred and fifty (\$950) dollars, the same to be credited to the Sanitary District of Chicago and the General Account (Telephone Service) thereof, receipt for said sum being hereto attached and made part of this report.

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

(Enclosing receipt, \$950.)

"CHICAGO, Nov. 20, 1895.

Received of Thos. F. Judge, Clerk of the Sanitary District of Chicago, the sum of nine hundred and fifty (\$950) dollars, being in full of money received for the use of District telephone line by private parties, in accordance with report of the Joint Committee on Finance and Engineering, adopted at the meeting held October 24, 1894 (page 2277 of the Proceedings) as per the following list:

Gahan & Byrne (Sections G and H).....	\$ 200
E. D. Smith & Co. (Section D).....	100
Western D. & I. Co. (Section C).....	100
Griffiths & McDermott (Section 1)....	100
McArthur Brothers (Sections 2 and 4)....	200
Gilman & Co. (Section 3).....	100
	<hr/>
Ingersoll-Sergeant Drill Company....	\$ 50
Crerar, Adams & Co.....	50
Franklin MacVeagh & Co.....	50
	<hr/>
Total.....	150
	<hr/>
	\$ 950

(Signed) MELVILLE E. STONE,
Treasurer of the Sanitary District of Chicago.

By A. B. CLEGHORN,
Assistant Treasurer."

(\$950.)

MOVING OF SECOND CABLEWAY ON SECTION 8 ACROSS SANTA FE TRACKS.

The Clerk presented a report from the Chief Engineer, asking authorization of payment for moving a second cableway on Section 8 from the west to the east side of the Santa Fe tracks, to the amount of \$1,400, as provided in the report; and the report was read.

Mr. Kelly, seconded by Mr. Russell, moved that the report be ordered printed and placed on file, and the authorization requested therein to pay not to exceed \$1 400 granted.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Eckhart, Kelly, Russell and Wenter—five (5). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed and placed on file, and the authorization requested therein to pay not to exceed \$1,400, granted.

The following is

THE REPORT: •

"CHICAGO, Nov. 18th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—On August 19th I brought before the Committee on Engineering

and Finance the question of moving a second cableway for Mason, Hoge, King & Co. on Section 8, from the west to the east side of the Santa Fe R. R. After a full discussion of the liability of this District in the premises and an explanation by myself, and an opinion by the Attorney, it was decided that it was proper for us to have the work done, and I was instructed to ask its authorization from your Honorable Body. The work has been done at a cost of \$1,400, and I ask you to authorize payment to H. Sheeler, who did the work, of a voucher for that amount.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

APPROVAL OF MONTHLY REPORT FROM
TREASURY DEPARTMENT.

Mr. Eckhart, Chairman, presented a report from the Committee on Finance, returning for filing the report from the Treasury Department for the month of October, 1895, presented and referred to that Committee at the meeting held November 6, 1895 (page 2913 of the Proceedings), recommending that the same be approved; and the report was read.

Mr. Eckhart, seconded by Mr. Russell, moved that the report be adopted, ordered printed and, with enclosure, placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT:

"CHICAGO, Nov. 20, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—Your Committee on Finance, to whom was referred at the meeting held November 6, 1895, (page 2913 of the Proceedings) the report of the Treasurer for the month of October, 1895, respectfully report that as said report shows fully the condition of the appropriation of \$1,000,000, made by your Honorable Body at the meeting held October 9, 1895, for the payment of maturing bonds and interest on bonds and on tax levy warrants, we return said

report herewith and recommend that the same be approved and placed on file.

Respectfully submitted,

(Signed) B. A. ECKHART,
Chairman.

W. H. RUSSELL,

THOMAS KELLY,

Committee on Finance."

(One (1) enclosure.)

SPECIFICATIONS TO BE PREPARED FOR RE-
TAINING WALLS ON SECTION 14.

Mr. Eckhart, for the Joint Committee on Engineering and Finance, presented a report from that Committee, stating that the Committee had been unable to reach an agreement with Smith & Eastman, Contractors for Section 14, for change from dry rubble to cement masonry retaining walls on said Section, and recommending that the Chief Engineer be directed to prepare the necessary plans and specifications for the construction of suitable retaining walls on said section as provided in the report; and the report was read.

By unanimous consent, the report was ordered printed and laid over until the next regular meeting.

The following is

THE REPORT:

"CHICAGO, Nov. 20, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—Your Committee have for a long time had under consideration the subject of retaining walls laid in cement for Section fourteen (14). A summary of the action of the Board in respect to the various contract sections since the order providing for retaining walls in cement was passed, is given in a report of your Committee, (page 2779 of Proceedings). The price which was agreed upon for the greater number of the contract sections as there recited, of \$3.25 per cubic yard for retaining walls laid in cement, was offered to the contractors of Section fourteen (14), but was refused by them. Since then, in spite of repeated efforts to that end, we have been able to reach no agreement upon any basis satisfactory to your Committee.

Since the work of excavation will be

finished within a few weeks we recommend that the Chief Engineer prepare the necessary plans and specifications, that proposals may be invited for the construction of retaining walls on said Section fourteen (14) and report same to your Honorable Body, to the end that said work may be let in time to enter upon same as soon as practicable in the Spring.

Respectfully submitted,

(Signed) L. E. COOLEY,
Chairman.

B. A. ECKHART,
THOMAS KELLY,
W. H. RUSSELL,
JOHN J. ALTPETER.

Joint Committee on Engineering and Finance."

REPORT ON DEDUCTION OF HOSPITAL
DUES FROM WAGES OF EMPLOYEES
ON MAIN CHANNEL.

Mr. Altpeter, Chairman, presented a report from the Committee on Labor, with reference to and accompanied by order concerning the limiting of the deduction of hospital dues from the wages of employes on the Main Channel, presented and referred to that Committee at the meeting held November 13, 1895 (page 2930 of the proceedings), and making certain recommendations in regard thereto; and the report was read.

Mr. Altpeter, seconded by Mr. Kelly, moved that the report be adopted, ordered printed and, with accompanying order, placed on file, and the recommendations made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Eckhart, Kelly, Russell, and Wenter—five (5). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and with accompanying order, placed on file, and the recommendations made in the report concurred in.

The following is

THE REPORT:

"CHICAGO, Nov. 20, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Committee on Labor, to whom was referred at the meeting held November 13, 1895 (page 2930 of the Proceedings), an order with reference

to limiting the deduction of hospital dues from the wages of employes of the contractors on the Main Channel, respectfully report as follows:

Your Committee called before it all the contractors on the line who make deductions for hospital dues, and it was agreed by said contractors that instead of deducting fifty cents per month from the wages of their men regardless of the number of days employed, they would hereafter make said deductions at the rate of two cents per day, and, where not already existing, suitable means for the care of sick and disabled workmen would be provided.

Your Committee considers this a proper settlement of the question, and recommend that it be so decided as the sense of your Honorable Body, and that the Clerk be directed to forward a copy of this report to each and every contractor on the line.

The order is returned herewith for filing.

Respectfully submitted,

(Signed) JOHN J. ALTPETER,
Chairman.
THOMAS KELLY,
B. A. ECKHART,
Committee on Labor."

(One (1) enclosure.)

OFFER FOR PUBLICATION OF MONOGRAPH
BOOK ON DISTRICT WORK.

The Clerk presented a communication from E. S. Hand, making proposition for the publication of a monograph book descriptive of the work of the District, as set forth in the communication; and the communication was read.

In connection with the communication, Mr. Altpeter presented an order, accepting the proposition made in said communication, under conditions as provided in the order; and the order was read.

Mr. Altpeter, seconded by Mr. Russell, moved that the communication be ordered printed and placed on file; and the order adopted,

On roll-call the vote stood: Yeas—Messrs. Altpeter, Eckhart, Kelly, Russell and Wenter—five (5). Nays—None.

Upon which result the President declared the motion carried, the communication ordered printed and placed on file, and the order adopted.

The following is

THE COMMUNICATION:

"53 EAST 10TH ST., NEW YORK.

Frank Wenter, Esq., President Sanitary District of Chicago, Rialto Building, Chicago:

DEAR SIR—Relative to the publication of a book or monograph, exhibitiv of the Chicago Drainage Canal.

I will make a book descriptive and illustrative of the Sanitary District of Chicago, equal in make-up and typographical execution to the book of the Equitable Building, a specimen copy of which is herewith submitted, containing an historical statistical sketch of Chicago and a description of the Canal, with engravings portraying its features, surroundings, construction, equipment, etc., accompanied by a report of the organization, resources, methods and accomplishments of the Sanitary District of Chicago, comprising from 64 to 100 pages, properly embellished with sub-titles, head and tail pieces, characteristic initials, etc., and bound in covers of attractive design.

In brief, a book possessing the attributes which will make it satisfactory to you and in every way creditable of the Canal which it will portray.

The edition to number 5,000 copies and as many more as the receipts may warrant me in publishing, 100 copies of which are to be delivered to your order at a cost of two cents a copy. Books to be subject to your order within ten days after publication.

In consideration of the reduced rate at which the books are sold to you, it is agreed that I am to be permitted to solicit and receive advertisements for insertion in the book, the attention of advertisers, and the individuals, firms and corporations employed in the construction and equipment of the Canal, being called to it as authoritative. It is also agreed that no other publication shall be issued, nor shall any person be authorized by you to issue a publication, of a like or similar character, within one year from date of the completion of the Canal.

Awaiting your determination, I am,

Very truly yours,

Signed)

E. S. HAND.

The within proposition is satisfactory and is accepted, and we hereby agree to furnish Mr. E. S. Hand with a complete

list of the individuals, firms and corporations identified with the construction and equipment of the Chicago Drainage Canal.

Date....."

The following is

THE ORDER:

"Ordered, That the proposition of Mr. E. S. Hand, to publish a book or monograph descriptive of the Sanitary District Drainage Channel without expense to the District, be accepted by the District with modification that the Sanitary District shall in no wise be responsible for the subject matter of said publication, nor shall the restriction therein as to other publications apply to any publication which the Board of Trustees may itself direct to be made."

REQUESTS FOR EXTENSION OF TIME ON CONTRACTS FOR SECTIONS G, H, 5 AND 6.

The Clerk presented communications from Gahan & Byrne, Contractors for Sections G and H; The Qualey Construction Company, Contractors for Section 5, and Mason, Hoge & Co., Contractors for Section 6, asking for extensions of time on their respective contracts, as set forth in the communications; and the communications were read.

Mr. Kelly, seconded by Mr. Eckhart, moved that the communications be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the communications were ordered printed and so referred.

The following are

THE COMMUNICATIONS:

"CHICAGO, Nov. 18th, 1895.

The Sanitary District of Chicago, Rialto Building, Chicago:

GENTLEMEN—We desire to make application for an extension of time on our contracts for Sections G and H until December 31st, 1896. We make this application for two reasons: First, we have been unable to secure the right of way at the Santa Fe crossing on our sections, which makes it impossible for us to do this work; and, second, on Section H we we have met with unexpected delays of which you are all aware.

We must obtain the right of way at the Santa Fe crossing at as early a date

as possible or we shall be unable to complete the work in the time asked for.

Very respectfully yours,

(Signed) GAHAN & BYRNE."

"CHICAGO, Nov. 15, 1895.

*To the Honorable the Board of Trustees,
Sanitary District of Chicago:*

GENTLEMEN—The Chief Engineer of the Sanitary District has expressed the desire to have us quarry and save a portion of the rock in Section 5, and a large percentage of the remaining material will also be required for the completion of the walls. As this character of work cannot be done during the winter season we respectfully request that you extend the time of completion of our contract to on or before November 30, 1896.

Yours respectfully,

Qualey Construction Company,

(Signed) JOSEPH S. QUALEY,
President."

"CHICAGO, Nov. 20th, 1895.

Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—We herewith apply for an extension of two months time upon the contract time for finishing our work upon Section 6.

We can finish this section within the contract time, but as we understand that it is not absolutely necessary for the work to be done on contract time, it is more convenient for us to have this extension, and we will be obliged if you will grant it to us.

Yours very truly,

(Signed) MASON, HOGE & Co."

CLAIM FOR EXTRA WORK IN MOVING
CHANNELERS AND CABLEWAYS
ON SECTION 8.

The Clerk presented a communication from Mason, Hoge, King & Co., accompanied by bill (\$564.48), being claim for extra work said to have been done in moving channelers and cableways on Section 8, as set forth in the communication and accompanying bill; and the communication was read.

Mr. Kelly, seconded by Mr. Russell, moved that the communication and accompanying bill be ordered printed and referred to the Committee on Finance.

The motion prevailed unanimously, and the communication and accompanying bill were ordered printed and so referred.

The following is

THE COMMUNICATION, WITH ACCOMPANYING BILL:

"CHICAGO, Nov. 20th, 1895.

Board of Trustees, of the Sanitary District of Chicago:

GENTLEMEN—We hand you herewith a bill for five hundred and sixty-four dollars and forty eight cents (\$564.48) for moving our channelers and cableways on Section 8, which expense we were forced to bear because we could not get the right of way across this section. We only furnish you a bill for the actual expense of moving the channelers over the railroad and for carrying the cableway after working up to the railroad, together with fifteen per cent added of the amount of this bill, because of actual money paid out by us, because we have not been able to get the right of way. We have also lost several thousand dollars because we have not been able to press the work, all of which your Engineer fully understands.

Yours very truly,

(Signed) MASON, HOGE, KING & Co."

(Accompanied by bill, \$564.48.)

"SANITARY DISTRICT OF CHICAGO

To Mason, Hoge, King & Co.

1895, Oct. 26—For extra work, moving channeling machines and Cableway No. 3, on account of no right of way being furnished across Santa Fe Railroad—

To moving two channelers from east side of Santa Fe R. R. to west side of same..	\$ 50 00
To moving five channelers from west side to east side of Santa Fe R. R.....	150 00
To moving one channeler from pit east of Santa Fe R. R. to top lift west of track.	25 00
To extra men moving Cableway No. 1 (after it had gone as close to Stephens street road as Engineer would permit) to pit west; five men 2 days each at \$1.50 per day.....	15 00
To moving Cableway No. 3 from about Station 1140 to Station 1134.....	150 85
To cost of taking down and putting up main cable, throwing weight off and re-weighting towers, moving Cableway No. 3 tower from about Station 1132 to Stephens street road.....	100 00
	\$ 490 85
Add 15 per cent.....	73 63
	\$ 564 48"

MEASUREMENT OF MASONRY ON SECTIONS 6, 7, 12 AND 13.

The Clerk presented a communication from Mason, Hoge & Co., Contractors, making objection to the method of measuring masonry on Sections 6, 7, 12 and 13, as set forth in the communication; and the communication was read.

Mr. Eckhart, seconded by Mr. Kelly, moved that the communication be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the communication was ordered printed and so referred.

The following is

THE COMMUNICATION:

“November 20, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—We would like to call your attention to the way our masonry on Sections 6, 7, 12 and 13 has been measured. If you will notice our contract, Clause 5 says: “The walls are to be four feet on top, and at the bottom they shall have a thickness equal to one-half of their total height, provided that their thickness at the bottom shall never be less than their top thickness plus their total batter, and at no point is their thickness to be less than one-half their height;” and at every point where your engineers could save masonry by veneering the walls, they have done so at our expense, and we claim that our work should be measured according to contract, or we to be paid as extra work for this veneering work.

Yours respectfully,

(Signed) MASON, HOGE & Co.”

MEASUREMENT OF MASONRY ON SECTION 8.

The Clerk presented a communication from Mason, Hoge, King & Co., Contractors for Section 8, making objection to the method of measuring masonry on said section, as set forth in the communication; and the communication was read.

Mr. Eckhart, seconded by Mr. Kelly, moved that the communication be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the communication was ordered printed and so referred.

The following is

THE COMMUNICATION:

“November 20, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—We would like to call your attention to the way our masonry on Section 8 has been measured. If you will notice our contract, Clause 5 says: “The walls are to be four feet on top and at bottom they shall have a thickness equal to one-half of their total height, provided that their thickness at the bottom shall never be less than their top thickness plus their total batter, and at no point is their thickness to be less than one-half their height;” and at every point where your Engineers could save masonry by veneering the walls they have done so at our expense, and we claim that our work should be measured according to contract, or we to be paid as extra work for this veneering work.

Yours respectfully,

(Signed) MASON, HOGE, KING & Co.”

REQUEST FOR LEASE OF GROUND ON SECTION 10.

The Clerk presented a communication from E. D. Smith & Co., accompanied by sketch, requesting a lease of certain ground on Section 10, as set forth in the communication and accompanying sketch; and the communication was read.

Mr. Kelly, seconded by Mr. Russell, moved that the communication be ordered printed, and, with accompanying sketch, referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously and the communication was ordered printed, and, with accompanying sketch, so referred.

The following is

COMMUNICATION:

“SUMMIT, COOK CO., ILL. }
November 20, 1895. }

To the Honorable Board of Trustees, Sanitary District of Chicago, Rialto Building, Chicago, Ill:

GENTLEMEN—We would respectfully request that your Board lease to us a small strip of ground on which we have two dwelling houses on Section 10. We should like to have lease for five or ten years.

We enclose sketch of the ground desired, with description.

Respectfully,

(Signed) E. D. SMITH & Co."
(Enclosing sketch.)

CLAIM FOR EXTRA WORK ON LEVEE ON SECTION 8 AND IN SAVING OF DIMENSION STONE ON SECTION 7.

The Clerk presented a communication from Mason, Hoge & Co., Contractors, accompanied by two bills (\$1,138.82 and \$490.20), being claim for extra work said to have been done on levee on Section 11 and in the saving of dimension stone on Section 7, as set forth in the communication and accompanying bills; and the communication was read.

Mr. Kelly, seconded by Mr. Russell, moved that the communication and accompanying bills be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the communication and accompanying bills were ordered printed and so referred.

The following is

THE COMMUNICATION, WITH ACCOMPANYING BILLS:

"CHICAGO, Nov. 20th, 1895.

Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—We hand you a bill for work done on the levee on Section 11, during the months of October, November and December, 1894, amounting to eleven hundred and thirty-eight dollars and eighty two cents (\$1,138.82), and also bill for placing wooden blocks under some dimension stone which we saved for you on Section 7. These blocks were placed under the stone so as to make the weights bear evenly, and save the stone from breaking in piling it up. All of this work was done by order of your Engineer, and we therefore think there should be no question about the allowance of this bill.

Yours very truly,

(Signed) MASON, HOGE & Co."
(Accompanied by two bills, \$1,138.82 and \$490.20.)

"SANITARY DISTRICT OF CHICAGO

In account with Mason Hoge & Co.

For work on River Diversion Levee—

During the month of October, 1894,
(statement attached)..... \$ 194 85

During the month of November, 1894, (statement attached).....	\$ 462 58
During the month of December, 1894, (statement attached).....	332 85
	<hr/>
Add 15 per cent.....	\$990 28 148 54
	<hr/>
	\$1,138 82"

(Itemized statement attached.)

"SANITARY DISTRICT OF CHICAGO

To Mason, Hoge & Company, Dr.

For lumber used in piling dimension stone as per order of Chief Engineer—

To bill rendered for lumber to August 1,	\$331 39
August 12—To 1,771 feet of lumber.....	24 80
September 7—To 1,600 feet of lumber....	22 40
October 12—To 1,282 feet of lumber....	17 67
To labor cutting and placing 20,000 feet lumber under the dimension stone as quarried.....	40 00

\$426 26

Add 15 per cent. 63 94

\$490 20"

CLAIM FOR PAYMENT FOR DRY RUBBLE WALL, NOT BUILT, ON SECTION 14.

The Clerk presented a communication from Smith & Eastman, Contractors for Section 14, accompanied by bill (\$27,126.56) being claim for payment for dry rubble retaining walls not built, on said section, as set forth in the communication and accompanying bill; and the communication was read.

Mr. Eckhart, seconded by Mr. Kelly, moved that the communication and accompanying bill be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the communication and accompanying bill were ordered printed and so referred.

The following is

THE COMMUNICATION, WITH ACCOMPANYING BILL:

"November 16th, 1895.

The Honorable Board of Trustees, Sanitary District of Chicago:

GENTLEMEN—Our contract on Section 14 calls for, approximately, 22,000 cubic yards of retaining wall, to be laid up dry, at two dollars (\$2.00) per yard.

On May 29th, 1894, your Honorable Board decided to have those walls laid in cement mortar, and made us an offer, through your Chief Engineer, of \$1.25

per cubic yard for the additional labor and material. We declined to accept this price, as insufficient, but agreed to accept the additional price which you had allowed on Sections 6 and 7, where the same question had been adjusted for the same kind of work, viz.: \$1.77; and we urged your acceptance of this offer, to enable us to do the work economically, while taking rock from the channel and while our machinery was in place; but we were at no time offered more than \$1.25 for the additional work, notwithstanding the fact that your Honorable Board has allowed higher prices on other sections, as the following statement will show:

SECTION.	Contract Price, Dry Wall.	Price Allowed for Wall laid in Cement.	Additional price for Cement Wall.
1.....	\$ 1 37½	\$ 2 90	\$ 1 52½
2.....	1 74	3 50	1 76
4.....	1 87	3 50	1 63
5.....	1 48	3 25	1 77
6.....	1 48	3 25	1 77
7.....	1 48	3 25	1 77
8.....	1 48	3 25	1 77
11.....	1 66	3 50	1 84
12.....	1 66	3 50	1 84
13.....	1 48	3 50	2 03
14.....	2 00	*3 25	+1 25

* Price offered for cement.

+ Difference offered to us for cement wall, Section 14.

If further proof is needed to show that the \$1.25 offered us for doing this additional work is unfair and unreasonable, it seems to be furnished in the report of your Joint Committee on Engineering and Finance, on page 27-0 of your official report, which, in the discussion of this subject, says: "Your Committee have thought that no better guide as to the actual additional cost of walls laid in cement over dry rubble walls could be furnished them than could be reached through the reports of their Engineering Department, based upon the actual experience of the contractors who have constructed the walls thus far built. They have accordingly obtained from the Chief Engineer a report, based on the observation of his assistants, as to the actual cost of the cement, sand and labor of mixing and hodding for a cubic yard of wall. The result reached is, that the additional cost incurred by reason of adding the cement, is \$1.47.4 per cubic yard. By adding to this fifteen per cent (15%) thereof, in accordance with the provisions of the extra work clause of

the contracts, we have a total of \$1.69½. In reaching these figures, the maximum allowance for waste of materials as also the maximum proportion of mortar to stone, 33½ per cent has been used. It is clear that in actual practice the maximum in these particulars will not continuously be reached."

Thus it appears we have been asked to do this work at 44½ cents per yard (amounting to \$9,790.00 for the quantity of work required to be done) less than its value, as shown by your own Chief Engineer's report.

On eight (8) of the sections where agreements have been made, a price has been paid largely in excess of the Chief Engineer's estimate. We have made these figures and comparisons to justify us in our refusal to accept for this work the price you have offered us.

Recently we have been asked to fix a price at which we would construct those walls in concrete. We have submitted a proposal to your Chief Engineer to do this work at \$4.30 per cubic yard.

As we have not been able heretofore to meet the views of your Honorable Board on this wall question, and being desirous for a fair and amicable adjustment, we now offer to submit all questions relating to the wall, and all other questions of dispute between your Honorable Board and ourselves on Section 14, to the arbitration of disinterested experts, whose decision shall be binding upon both parties to this contract.

We also respectfully submit for your favorable consideration, a statement of our claim on the wall, as it now stands. Trusting that a speedy adjustment may be reached, we are

Most respectfully yours,

SMITH & EASTMAN."

(Accompanied by bill—\$27,126.56.)

"THE SANITARY DISTRICT OF CHICAGO,
Dr. To Smith & Eastman,
To 19,946 cubic yards of dry retaining
wall on Section 14, as per contract
dated July 12, 1892, and agreement
dated Jan. 6, 1894, at \$2.00.....\$39,892 00
Cr.
By labor omitted, 19,946 cubic yards
at 64c..... 12,765 44
Balance due Smith & Eastman.....\$27,126 56

NOTE—The labor for raising the rock out of the channel and placing it in the retaining wall is worth \$1 per cubic yard, but we have expended 36 cents per cubic yard of this amount in removing the rock from the channel and depositing it in the spoil bank."

**PRESENTATION OF BIDS FOR CONSTRUCTING REGULATING WORKS ON MAIN CHANNEL
AT LOCKPORT.**

The President then announced that in conformity with the advertisement of September 13, 18-5, published for sixty (60) days as required by the Sanitary District Act, inviting bids for the work of constructing Regulating Works on the Main Channel at Lockport, the Board would now proceed to open bids received in response to same.

The Clerk then presented and opened bids as shown by the following

SCHEDULE OF BIDS:

REGULATING WORKS.

No.	NAME OF BIDDER.	Location.	Check Deposited.
1	Campbell, Dennis & Co.....	Joliet, Ill.....	\$5,000 00
*2	Shailer & Schniglaue Company.....	Chicago, Ill.....	5 000 00
*3	E. D. Smith & Co.....	Summit, Ill.....	5 000 00
*4	Christie & Lowe.....	Chicago, Ill.....	5 000 00
5	American Bridge Works.....	Chicago, Ill.....	5 000 00
*6	L. L. Leach & Son.....	Chicago, Ill.....	5 000 00
*7	The Griffiths & McDermott Construction Company	Chicago, Ill.....	5 000 00
*8	Detroit Bridge and Iron Works.....	Detroit, Mich.....	5,000 00

*Accompanied by special designs.

The following are

THE BIDS IN DETAIL:

REGULATING WORKS—BIDS OF NOVEMBER 20, 1895.

No.	NAMES.	A.	B.	C.	D.	E.
		All work for sluice gates above 17 75. Lump sum.	Masonry sluice gates below 17 75. Per cu. yd.	Concrete sluice gates below 17 75. Per cu. yd.	Excavation. Per cu. yd.	All work for Bear Trap. Lump sum.
1	Campbell, Dennis & Co., Joliet, Ill.....	\$283 953 00	\$18 00	\$ 8 00	\$1 25	\$92 181 00
2	Shailer & Schniglaue Co, Chicago, Ill...	124,650 00	11 00	5 00	65	60 564 00
3	E. D. Smith & Co., Summit, Ill.....	153 900 00	15 00	9 00	75	39 000 00
4	Christie & Lowe, Chicago, Ill.....	120 000 00	15 00	8 00	1 00	58 000 00
5	American Bridge Works, Chicago, Ill..	152 500 00	18 00	10 00	1 00	57 200 00
6	L. L. Leach & Son, Chicago, Ill.....	131 973 00	15 00	8 00	1 40	60 939 00
7	The Griffiths & McDermott Const. Co.	154 933 00	17 50	7 00	1 00	47 400 00
8	Detroit Bridge and Iron Works.....	145 000 00	14 75	7 50	1 00	49 600 00

**BIDS TO BE TABULATED AND REFERRED TO JOINT COMMITTEE ON ENGINEERING
AND FINANCE.**

Mr. Eckhart, seconded by Mr. Russell, moved that the bids just received be compiled, summarized and tabulated by the Chief Engineer, incorporated in Proceedings, and the subject-matter of the bids be referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and it was so ordered.

ADJOURNMENT.

On motion of Mr. Eckhart, seconded by Mr. Altpeter, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

NOVEMBER 27, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

REGULAR MEETING.

The two hundred and ninety-first regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, November 27, 1895, at 2 o'clock P. M.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7) members, were present.

MINUTES.

The minutes of the regular meeting held November 20, 1895, were approved as printed, on motion of Mr. Kelly, seconded by Mr. Russell.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

Cameron, Amberg & Co. (stationery).....	\$	18 60
Stromberg, Allen & Co. (stationery).....		14 88
P. F. Pettibone & Co., (stationery).....		5 50
A. C. McClurg & Co., (stationery)		3 00
Eugene Dietzgen Company (drafting supplies).....		3 60
A. H. Abbott & Co., (drafting supplies).....		4 91

Keuffel & Esser Co., (drafting supplies).....	\$ 10 37
Post, Jacobi & Bruning Company, (drafting supplies).....	26 44
Post, Jacobi & Bruning Company, (blue prints).....	117 77
F. Mayer & Co., (blue prints).....	126 67
W. A. Olmsted, (mounting prints).....	12 25
Rand, McNally & Co., (maps).....	3 50
Office Specialty Manufacturing Company, (index cabinet).....	31 00
Treleaven Optical Company, (photo supplies).....	37 14
Walmsley, Fuller & Co. (photo supplies).....	15 40
Seelig & Kandler, (repairing transits, etc).....	23 25
Vilas Bros. (oil).....	1 80
Chicago Edison Company, (repairs).....	2 78
	<hr/> \$ 458 86

CLERICAL DEPARTMENT.

Waukesha Hygeia Mineral Springs Company, (water).....	3 75
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LAW DEPARTMENT.

Callaghan & Co. (court reports).....	\$ 2 25
Frank Vander Bogart, clerk, (court fees).....	144 85
Geo. E. Dawson, (expense).....	63 60
	<hr/> \$ 210 70

GENERAL ACCOUNT.

Chicago Edison Company, (electric lighting).....	\$ 56 02
F. X. Brandecker (advertising Regulating Works).....	8 00
	<hr/> \$ 64 02

POLICE DEPARTMENT.

McArthur Bros. Company (coal, oil, etc.).....	5 06
Grand total.....	<hr/> \$ 742 39

Mr. Eckhart, seconded by Mr. Russell, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried; and the vouchers, as read and shown above, approved and ordered paid.

REQUISITIONS.

The Clerk presented the following requisitions:

No. 714, Treasury Department, (envelopes).....	\$ 4 00
No. 804, Law Department, (envelopes).....	10 00
No. 1065, Clerical Department, (envelopes and stationery).....	18 50
Total.....	<hr/> \$32 50

Mr. Kelly, seconded by Mr. Russell, moved that Requisitions No. 714, for the Treasury Department, No. 804, for the Law Department and No. 1064, for the Clerical Department, as read and shown above, be allowed.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, and Requisitions No. 714, for the Treasury Department, No. 804, for the Law Department and No. 1064, for the Clerical Department, as read and shown above, allowed.

MONTHLY REPORT FROM ENGINEERING DEPARTMENT.

The Clerk presented a report from the Engineering Department for the month of October, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, Nov. 27, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—I herewith transmit the reports of the Divisions of Construction and Drafting and Designing, showing the detailed operations of the Engineering Department for the month of October, 1895; also a classified statement of expenses to Nov. 1st, 1895.

The expenses for the month of October were as follows:

Salaries.....	\$ 16,195 54
Supplies, etc.....	593 26
Regular contractors' estimates.....	473,985 20
Extra contractors' estimates.....	4,300 91
Total.....	<u>\$ 495,074 91</u>

I estimate the expenses of the Department for the month of November will be \$300,000.00.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

"CHICAGO, Nov. 23, 1895.

Isham Randolph, Esq., Chief Engineer:

DEAR SIR—I herewith submit my report of the work of construction for the month of October, with the usual tabulated statements showing the value of the work done during the month and the condition of the work as a whole, up to the 1st instant. The value of the work done during the past month amounts to \$537,719.57, and rounds out a season of unparalleled exertion and progress, bringing the total quantities excavated up to more than twenty-nine million cubic yards, which is about 75 per cent of the entire work of excavation.

Practically, the same plant and methods were employed on the various sections as heretofore noted, with the following results:

Section O returns an estimate of 41,400 cubic yards, of which 13,400 were taken out of the collateral channel. A wheel scraper force was employed in the Main Channel, west of Rockwell street, which moved 4,404 cubic yards, the material being deposited in the Southwest boulevard.

Two steam dredges were in service, continuing the excavation from the east end of the section, through the temporary cut across Western Avenue boulevard, and thence westward. This dredge work was commenced September 20th, and the output up to the monthly estimate was 17,239 cubic yards, an average of 338 yards per dredge per day. This material was taken away in scows, which averaged 133 yards each. Of the 1,516,734 cubic yards in this section, 537,381 yards have been excavated, leaving a balance of 929,413 yards.

Section N is credited with an output of 23,300 cubic yards, of which 17,300 yards were moved by steam shovels and inclines, in thirty-five shifts, an average of 494 yards per shift. The balance, 6,000 yards, were handled with teams and wheel scrapers. There have been excavated 129,790 out of 1,113,843 cubic yards in this section, leaving a balance of 993,143 cubic yards.

Section M and L. A small car force was employed on the west end of Section L which moved about 3,700 cubic yards at an average rate of twenty-one yards per car per day.

The four steam shovels and inclines were operated 151 shifts during the month, taking out 93,100 cubic yards, an average of about 616 yards per shift. The standing of these sections on the 1st inst., is as follows:

Section M.

Total yardage.....	722,850
Amount excavated.....	673,300

Balance remaining..... 49,550

Section L.

Total yardage.....	1,101,881
Amount excavated.....	1,033,691

Balance remaining..... 18,190

Sections K and I yield an output for the month of 110,117 cubic yards of which 10,402 yards were taken out with teams and wheel scrapers, and the balance 99,715 yards with two steam shovels and truss conveyors in 118 shifts, an average of 845 cubic yards per shift. Section I was completed during the month, and but 116,357 cubic yards out of 1,155,957 remain in Section K.

Sections H and G--A small force of teams and wheel scrapers were employed on Section H at different points that moved about 3,000 cubic yards. The steam shovel and incline made the best record yet attained in earth work by any

appliance, its output being 41,624 cubic yards in forty-five and one-half shifts, an average of 915 cubic yards per shift. The Hoover & Mason conveyor was operated forty-seven shifts, averaging 736 yards per shift, its output being 34,582 yards.

On Section G the total output was 44,141 cubic yards of which the steam shovel and belt conveyor is credited with 16,864 yards in thirty-five shifts, an average of 482 yards per shift, and the steam shovel and incline 27,277 cubic yards in forty-seven shifts, an average of 580 yards per shift. Considerable work was also done in trimming slopes. The conditions of these sections on the 1st inst. is as follows:

Section H.

Total yardage.....	1,077,032
Amount excavated.....	515,108
Balance remaining.....	561,924

Section G.

Total yardage.....	1,364,075
Amount excavated	890,780
Balance remaining	473,295

Section F returns an estimate for the month of 34,500 cubic yards, which was moved by two steam shovels with truss conveyors, in 109 shifts, an average of about 3.6 yards per shift. The total estimated quantities in the section is 1,110,377 cubic yards, of which there have been taken out \$670,293, leaving a balance of 440,084 yards remaining.

Section E moved 47,500 cubic yards during the month, of which 3,400 yards was handled with teams and scrapers, and the balance (44,100 yards) with steam shovels in 98 shifts, an average of 450 yards per shift. Another steam shovel of extra heavy pattern and a steel incline, to be operated in conjunction therewith, have been added to the plant. Of the 1,892,424 cubic yards in the section, 904,983 have been moved, leaving a balance of 987,461 yards remaining on the 1st inst.

Section D—The same plant—three steam shovels—continued operations on this section. One shovel, No. 165, worked 11 shifts, the material being taken away with wagons and small cars, moving 3,700 cubic yards, an average of 336 yards per shift. Shovel No. 167 moved 14,400 yards in 38½ shifts, an average of 374 yards, and shovel No. 182 handled 19,200 yards in 34 shifts, an average of

565 yards. The material from the two latter was hauled away by locomotives and cars. Ditching operations through the uneven surface of solid rock was continued to provide drainage, but as the waste material was not removed no estimate thereof was made. The total yardage in the section was \$2,015,415, of which 1,610,100 have been excavated, leaving a balance of 405,315 cubic yards to be moved.

Section C handled 51,300 cubic yards during the month, 11,800 yards of which were taken out with team and shovel forces and 42,500 yards with three steam shovels that were operated ninety-nine shifts, an average of about 430 yards each per shift. The material from one shovel was taken out on cars with a steam hoist averaging 518 yards per shift, and that from the other two shovels was moved with cars and locomotives, averaging 404 yards per shift. The total yardage in the sections was 1,87,755; the quantity moved is 1,294,963, leaving a balance of 592,792 yards on the 1st inst.

Section B continued operations with two steam shovels, the material from which was hauled away with cars and locomotives. The output for the month was 45,200 cubic yards in eighty-nine shifts, an average of about 508 yards per shift. The section contained 1,576,828 cubic yards, of which 1,108,405 have been excavated, leaving a balance of 468,423 remaining.

Section A shows much improvement, being credited with 49,500 cubic yards, of which 13,400 were taken out by team forces and the balance, 36,100 yards, by three steam shovels in seventy-five shifts, averaging about 481 yards per shift. Another steam shovel and truss conveyor is being installed which should materially increase the output. The section contained 2,580,696 cubic yards, of which there has been excavated 1,038,653 yards, leaving a balance of 1,542,043 yards remaining.

Section 1 returns an output of 32,200 yards of glacial drift, 5,100 yards of solid rock and 759 yards of retaining wall masonry. Three steam shovels were employed ninety-two and one-half shifts on the glacial drift, averaging 343 yards per shift for the 31,700 yards thus moved; the other 500 yards were taken out with manual labor. In the solid rock one cantilever moved 2,600 yards in ten and one-half shifts, an average of 247 yards per shift, and 1,800 yards were handled with an incline in ten shifts, an average of 130 yards per

shift; the balance, 1,200 yards, was taken out by quarry forces. Another cantilever has been added to the plant which will improve the output. The section contained 1,709,775 cubic yards, of which 80,766 yards have been excavated, leaving a balance of 829,009 yards remaining.

Sections 2 and 4—Owing to conditions mentioned in my last report, but little has been done on these sections during the past month. Section 2 returns an estimate of 6,600 cubic yards of solid rock and 500 yards of retaining wall masonry. Section 4 gives 17,600 yards of Glacial Drift and 1,400 yards of solid rock. The condition of these sections on the 1st inst. was as follows:

Section 2.

Total yardage.....	1,202,613
Amount excavated.....	955,200
Balance remaining.....	207,413

Section 4.

Total yardage.....	1,340,675
Amount excavated.....	1,211,800
Balance remaining.....	128,875

Section 3 continues to maintain its usual rate of progress, and is well in advance of its contract requirements. Its output for the month is 1,700 yards of glacial drift, 40,900 yards of solid rock and 3,100 yards of retaining wall masonry. The section contained 1,181,982 cubic yards, of which 1,069,710 yards have been taken out, leaving a balance of 112,272 yards remaining.

Section 5 returns an estimate of 25,300 yards of glacial drift, 11,500 yards of solid rock and 4,400 yards of masonry in retaining walls. The section contained 1,329,854 yards, of which 988,600 yards have been moved, leaving a balance of 343,254 yards remaining.

Section 6—The output on this section is 30,200 yards of solid rock and 4,300 yards of retaining wall masonry. The section contained 1,234,274 cubic yards, of which there have been 968,500 yards excavated, leaving a balance of 265,774 yards remaining.

Section 7 gives an output of 39,700 yards of solid rock and 1,460 yards of retaining wall masonry. The section contained 1,072,774 cubic yards, of which there have been taken out 911,500 yards, leaving a balance of 161,274 yards remaining.

Section 8 has an estimate of 35,900 cubic yards of solid rock. The section contained 1,206,891 cubic yards; amount excavated 1,056,100 yards; balance remaining 150,791 cubic yards.

Section 9 and 10 completed.

Section 11—The output for the month was 39,400 yards of solid rock. The section contained 1,033,732 cubic yards; amount excavated 999,732 cubic yards; balance remaining 34,000 cubic yards.

Section 12 has an output of 26,460 yards of solid rock and 1,772 yards of retaining wall masonry. The section contained 1,030,500 cubic yards; amount excavated 1,023,291 cubic yards; balance remaining 7,209 cubic yards.

Section 13 is practically completed.

Section 14 returns for the month 3,000 yards of glacial drift and 65,000 yards of solid rock. The section contained 1,402,755 cubic yards; amount excavated 1,276,100 cubic yards; balance remaining 126,655 cubic yards.

Section 15—The output for the month is 1,500 yards of glacial drift and 53,600 yards of solid rock. The section contained 675,700 cubic yards; amount excavated 377,600 cubic yards; balance remaining 298,100 cubic yards.

Respectfully submitted,
(Signed) U. W. WESTON,
Supt. of Construction."

TABLE OF AMOUNT OF WORK DONE (INCLUDING RIVER DIVER

SECTIONS.	CONTRACTORS.	MAIN CHANNEL.		RIVER DIVERSION.		RUBBLE MASONRY.
		<i>Glacial Drift.</i>	<i>Solid Rock.</i>	<i>Glacial Drift.</i>	<i>Solid Rock.</i>	
		Cubic Yds.	Cubic Yds.	Cubic Yds.	Cubic Yds.	
O	McMahon & Montgomery Co. et al.	684 421				
N	Hayes Bros. et al.	120,700				
M	The Heidenreich Co.	673,300				
L	The Heidenreich Co.	1 083 691				
K	Christie & Lowe	1 039 600				
I	Christie & Lowe	1 130 700				
H	Gahan & Byrne	515 108				
G	Gahan & Byrne	890 780				
F	Weir, McKechney & Co.	670 293		158 234		
E	Angus & Gindele	904 963		95 718		
D	E. D. Smith & Co.	1 610 100				
C	Western Dredging & Imp't. Co.	1 294 963		162 537		
B	Heldmaier & Neu.	1 108 405		212 486		
A	Heldmaier & Neu.	1 038 653		128 425		
1	Griffiths & McDermott	801 266	79 500	5 876		1 305
2	McArthur Bros.	708 900	286 300	29 516		500
3	Gilman & Co.	411 910	657 800			11 900
4	McArthur Bros.	1 058 100	153 700			
5	The Qualey Construction Co.	834 800	151 800			26 900
6	Mason, Hoge & Co.	663 800	304 700	116 800		28 500
7	Mason, Hoge & Co.	172 400	739 100	97 000	41 800	5 660
8	Mason, Hoge, King & Co.	41 600	1 014 500	56 600	96 900	2 700
9	Halvorson, Richards & Co.	76 691	1 003 200	40 741	16 894	
10	E. D. Smith & Co.	31 743	1 141 191	30 313	58 276	
11	Mason, Hoge & Co.	44 032	955 700	5 756	11 483	
12	Mason, Hoge & Co.	42 531	980 760	11 739		7 369 44
13	Mason, Hoge & Co.	32 822	1 026 200			10 560
14	Smith & Eastman	358 700	917 400			
15	Wright, Meysenburg, Sinclair & Carry	31 600	346 000			
Totals		18,076,572	9,757,851	1,151,741	225,353	95,394 44

Main Channel, glacial drift, including 97,100 cubic yards collateral
 Main Channel, solid rock.....
 River Diversion, glacial drift.....
 River Diversion, solid rock.....
 Rubble Masonry.....

Total amount required to be done November 1st, 1895.....

Total amount done November 1st, 1895.....

Total amount short as per contracts.....

Total value of work done under regular contracts, November 1st, 1895...

Total value of collateral work done, November 1st, 1895.....

Total value of all construction work done, November 1st, 1895.....

Reserved, regular contracts..... { 12½ per cent.....

Current estimates, regular contracts..... { 10 per cent.....

Current estimates, collateral work.....

Total disbursement, Construction Account, to November 1st, 1895...

NOTE.—*Overhaul to Levee—Section 1 not included.

SION) AND CONDITION OF WORK ON CONTRACTS, NOV. 1ST, 1895.

Total value of work done to Nov. 1st, 1895, on each section.	Total value of work required to be done to Nov. 1st, 1895.	Amounts behind as per contracts.	Amounts ahead as per contracts.	Average monthly progress called for in contracts.	Average monthly progress necessary from July 1st, 1894, to time of completion.	Progress made during month of October, 1895.
\$ 142 660 31	\$ 258,588 00	\$ 115,927 69	.....	\$14,366 00	\$ 22,841 19	\$ 8,546 60
27,761 00	192,137 94	164 376 94	.....	10,674 33	23,861 19	5 359 00
146 105 10	119 212 46	.....	\$ 25,893 64	6,274 34	4 128 43	10 524 50
213,487 13	164,973 58	.....	48,513 55	8,682 82	6,004 19	9 927 03
259,900 00	219,631 83	.....	40 268 17	11,559 57	11,731 43	26,100 00
282,675 00	216,571 11	.....	66,103 89	11,398 49	5 061 60	1,425 00
149,331 32	237,377 83	87,996 51	.....	12 493 57	24,985 85	22,964 52
249,418 40	290,275 16	40 856 76	.....	15,277 64	18,749 39	12,359 48
206,320 16	265,300 32	58,980 16	.....	13,493 77	15,934 52	10,177 50
273 008 28	457,339 17	184,330 89	.....	23,230 53	39,921 05	12 825 00
425 670 19	538,038 20	112 368 01	.....	19,215 65	29 540 95	9 861 19
342,512 50	411,479 88	68,967 38	.....	14,695 71	22,081 33	12,760 50
356 640 57	409 852 24	53,211 67	.....	14,637 58	20,879 94	12 198 06
357 417 63	705,679 80	348,262 17	.....	25,202 35	57,128 97	15,193 98
*348,833 36	796,432 17	402,593 81	.....	44,801 03	74,652 70	20 094 90
586 975 98	698,031 18	111,055 20	.....	21,152 46	31,405 39	7,030 00
748 012 70	690,880 80	.....	57,131 90	29,177 70	30,312 19	42 111 00
630 738 54	781,410 78	150 672 24	.....	22,982 67	37 534 95	9,744 00
417,814 00	615,981 59	168,167 59	.....	18,387 51	37,866 87	30,595 50
526,136 50	567,732 54	41,596 04	.....	26,896 13	35,435 40	36,199 00
662 400 50	629,549 06	.....	32,851 44	25,699 42	25,710 70	33 924 50
865,078 50	839,266 05	.....	25,812 45	23,979 03	23 247 48	26,835 25
814 984 61	696,508 05	.....	118 476 56	19,900 23	11 328 29	15,310 51
975,087 60	832,308 75	.....	142,778 85	23,780 25	6,364 03	.....
781,553 40	690 181 45	.....	91,371 95	19,719 47	16 048 13	31,224 50
819 429 92	717,518 90	.....	101,911 02	20,500 54	13 502 66	27,171 55
812 578 22	739,900 70	.....	72,677 52	21,140 02	8,976 03	7,297 50
775 378 00	792,701 35	17,823 35	.....	22,648 61	34 732 92	48,050 00
210,144 00	306,899 45	96,755 45	.....	23,607 65	34,647 27	31,909 00
\$13,483,104 42	\$14 881,760 34	\$2 223,446 86	\$824,780 94	\$565,575 57	\$724,565 04	\$537,719 57

channel.....	Cubic Yards.
.....	18 076,572
.....	9,757,851
.....	1,151,741
.....	225,353
.....	95,394.44
.....	\$14,881 760 34
.....	13,483,104 42
.....	\$1,398,655 92
.....
.....	*\$13 483,104 42
.....	†657 829 18
.....	\$14,140,933 60
.....	\$1,671,629 16
.....	81,323 23
.....	235 060 11
.....	4,218 57
.....	1,992 231 07
.....	\$12,143,702 53

†Overhaul to Levee—Section 1 included.

STATEMENT SHOWING AMOUNT OF WORK DONE DURING THE MONTH
OF OCTOBER, 1895—(MAIN CHANNEL).

SECTIONS.	Amount Done During October.	Average Monthly Requirement.	Deficiency Under Monthly Requirement.	Excess Over Monthly Requirement.	Per Cent. of Monthly Requirement.
O.....	\$ 8,546 60	\$ 13,271 42	\$ 4,724 82	.....	64.
N.....	5,359 00	10,674 33	5,315 33	.....	50.
M.....	10 524 50	6 274 34	.....	4 250 16	168.
L.....	9,927 03	8 682 82	.....	1,244 21	114.
K.....	26,100 00	11,559 57	.....	14,540 43	226.
I.....	1,425 00	11 398 49	* 9,973 49	.....	13.
H.....	22 964 52	12,493 57	.....	10,470 95	184.
G.....	12 359 48	15,277 64	2,918 16	.....	81.
F.....	10,177 50	13,493 77	3 316 27	.....	75.
E.....	12 825 00	23,230 53	10,405 53	.....	55.
D.....	9 861 19	19,215 65	9,354 46	.....	51.
C.....	12,760 50	13,443 10	682 60	.....	95.
B.....	12,198 06	12 901 32	703 26	.....	95.
A.....	15,152 02	24,012 30	8 860 28	.....	63.
1.....	20,194 90	44,801 03	24,706 13	.....	45.
2.....	7,030 00	20,950 88	13,920 88	.....	34.
3.....	42,111 00	29,177 70	.....	12,933 30	144.
4.....	9,744 00	22 982 67	13,238 67	.....	42.
5.....	30,595 50	13 387 51	.....	12 207 99	166.
6.....	36,172 00	26,827 41	.....	9 344 59	135.
7.....	33 924 50	25 622 15	.....	8,302 35	132.
8.....	26,835 25	21,799 22	.....	5,036 03	123.
9.....	13,832 36	19,325 00	* 5,492 64	.....	72.
10.....	.....	22,458 34	* 22,458 34	.....	.....
11.....	31,224 50	19 455 05	.....	11 769 45	160.
12.....	27 171 55	20,413 93	.....	6,757 62	133.
13.....	7,297 50	21,140 02	13,842 52	.....	35.
14.....	48 050 00	22 648 61	.....	25,401 39	212.
15.....	31 909 00	23,607 65	.....	8 301 35	135.
Totals.....	\$536,172 46	\$555,526 02	\$ 149,913 38	\$130 559 82	96.

* Section completed.

"CHICAGO, Nov. 16, 1895.

Isham Randolph, Esq., Chief Engineer:

DEAR SIR—The work of the Division of Drafting and Designing for the month of October was as follows:

The preparation of plans for Regulating Works and tail race was continued.

Considerable time was given to miscellaneous hydraulic data, pertaining to the Desplaines, Illinois and Mississippi Rivers. The relation of the datums of the Mississippi River to the Chicago City datum was determined.

The survey in the vicinity of Fortieth street was completed. The survey along the North Branch was continued. The North Branch was sounded from Fulton street north to Chicago avenue.

The testing of cement for use in the retaining walls was continued, as was also the work of preparing record photographs and the maintenance of water gauges.

Miscellaneous work was done pertaining to plans for improving the South Branch, inspection of Main Channel works and improvement of the Stock Yards slips.

An exhibit of Sanitary District maps and plans was made at the Water Ways Convention, held at Vicksburg, Mississippi, October 22d and 23d, including a display of about seventy-five (75) lantern slides.

The following work was finished: Parts 2, 3, 4, 5, 6 and 12 of the maps and tracings of the Chicago River Survey; an exhibit profile for the Vicksburg Waterway Convention; a map showing the buildings on the right of way, between Summit and Lemont; a plat of right of way west of the Willow Springs road; two plats of lands leased to the Western Stone Company; a map showing the survey notes of the south right of way line in Sections 20 and 21, T. 37 N., R. 11 E., and a plat of the original field notes of

the Illinois and Michigan Canal, in Sections 20, 21, 22 and 15, T. 37 N., R. 11 E.

Also finished the following tracings: Two of the right of way at Western avenue; a table of areas; the profile of the Upper Illinois River; two profiles of lines A and B through Joliet and the Lockport contour sheet.

Commenced work on the tracings of the map of the Fortieth street survey, and the profile of the St. Lawrence River.

Platting was continued on the watershed map, the second third parts of the topographical map, the two contour sheets between the Will County line and Joliet, the progress profiles, and map of the Lower Illinois River.

Expenses for November will be about the same as for October.

Respectfully submitted,

(Signed)

THOS. T. JOHNSTON,
Assistant Chief Engineer."

SANITARY DISTRICT OF CHICAGO—ENGINEERING DEPARTMENT.

CLASSIFIED STATEMENT OF EXPENDITURES DURING THE MONTH OF OCTOBER, 1895.

CLASSIFICATION.	Eng. Expenses.		Construction.		Total for Month.		Previously Reported.		Total to Date.	
	Salaries.	Supplies, Etc.	Regular.	Extra.	Eng. Expenses.	Construction	Eng. Expenses.	Construction	Eng. Expenses.	Construction
Preliminary Sundries.....							\$120,033 75		\$120,033 75	
Locating Route, Main Channel.....							32,222 94		32,222 94	
Boings and Test Pits.....							16,206 50		16,206 50	
Maps, Plans and Specifications.....	\$ 976 10	\$ 37 35			\$1,013 45		36,485 10		37,498 55	
Chicago River Survey.....	1,870 50	33 81			1,904 31		20,760 53		32,186 74	
Right of Way.....	6 60	19 60			26 20		17,028 06		20,786 73	
Flood Measurements.....	382 90	62 65			445 55		23,101 27		17,473 61	
Disposal Works at Lockport.....	442 00	15 79			457 79		306,766 88	\$11,275 92	23,559 06	
Regular Construction.....					11,325 62	\$473,985 20		13,455 51	318,092 50	\$11,749,903 62
Extra Work—Main Channel.....	10,891 84	433 78	\$473,985 20				9,723 42	333,993 01	9,723 42	333,993 01
Levees, Trestles and Embankments.....							1,754 91	182,560 32	1,754 91	180,034 43
Spillway.....				\$3,494 11		3,494 11	1,754 91	30,518 41	5,240 04	30,518 41
Tow Path.....							1,157 03	19,029 06	3,540 04	19,029 06
Building Western Stone Company's Bridge.....							985 06	22,329 89	985 06	22,329 89
Building Stephens Street Bridge.....							770 72	18,738 80	770 72	18,738 80
Building Atchison, Topeka & Santa Fe Bridge.....							32 17		32 17	
Building Mt. Forest Foot Bridge.....							66 30		66 30	
Building W. Western Avenue temporary Bridge.....				506 80		506 80	1,050 13	7,756 19	1,050 13	7,756 19
Repairing and Moving Bridges.....							2,339 43		2,339 43	
Office Building at Sag.....								781 63		781 63
Saving of Building Sand.....							6,531 53		7,249 03	
Mortar, Sand and Cement Tests.....		40 10						10,468 00		10,468 00
Saving of Dimension Stone.....	677 40			300 00		300 00	1,496 75		1,496 75	
Erosion Test.....							237 00		237 00	
Temporary Sanitary Relief.....							3,192 44		3,349 44	
Photographs of Works.....	138 20	18 80			157 00		1,138 14		1,138 14	
Public Reports.....							5,215 76		5,223 82	
Remeasurement of Main Channel.....		8 06			8 06		769 88		769 88	
Effect of Main Channel water on Lake Levels.....	70 00	13 42			83 42		70,550 33		71,300 23	
General Account.....	740 00	— 90 10			649 90					
Totals.....	\$16,195 54	\$593 26	\$473,985 20	\$4,300 91	\$16,788 80	\$478,286 11	\$716,619 47	\$11,905,552 23	\$738,408 27	\$12,889,838 34

SPECIFICATIONS TO BE PREPARED FOR
RETAINING WALLS ON SECTION 14.

Under the head of "Unfinished Business," the report of the Joint Committee on Engineering and Finance, stating that the Committee had been unable to reach an agreement with Smith and Eastman, Contractors for Section 14, for change from dry rubble to cement masonry retaining walls on said section, and recommending that the Chief Engineer be directed to prepare the necessary plans and specifications for the construction of suitable retaining walls on said section, as provided in the report, presented, ordered printed and laid over at the meeting held November 20, 1895, (page 2937 of the Proceedings), was then taken up.

Mr. Cooley, seconded by Mr. Kelly, moved that the report be adopted and placed on file, and the recommendations made therein concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted and placed on file, and the recommendations made therein concurred in.

REPORT ON CLAIM FOR PAYMENT FOR
DRY RUBBLE WALL, NOT BUILT,
ON SECTION 14.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by communication, enclosing bill (\$27,126.56), from Smith & Eastman, Contractors for Section 14, being claim for payment for dry rubble retaining walls not built, on said section, presented and referred to that Committee at the meeting held November 20, 1895 (page 2942 of the Proceedings), recommending that the accompanying communication and bill be filed, and the former report on retaining walls on said section be approved and concurred in, as provided in the report; and the report was read.

Mr. Cooley, seconded by Mr. Eckhart, moved that the report be adopted, ordered printed, and, with enclosures, placed on file, and the recommendations made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and, with enclosures, placed on file, and the recommendations made in the report concurred in.

The following is

THE REPORT:

"CHICAGO, Nov. 27th, 1895.

*To the Honorable the Board of Trustees of
the Sanitary District of Chicago:*

GENTLEMEN—At your last meeting a communication from Messrs. Smith and Eastman, contractors for Section fourteen (14), was referred to this Committee (Proceedings 2942). The subject matter of said communication has already been before your Committee and after mature consideration, our conclusions thereon were stated in a report to your Honorable Body (Proceedings 2937), which was laid over by you until the next regular meeting.

We recommend that the communication and bill of Messrs. Smith & Eastman, herewith returned, be filed, and that our former report relating to retaining walls on said section, be approved and the recommendations therein made be concurred in.

Respectfully submitted,

(Signed) L. E. COOLEY,
Chairman.

THOMAS KELLY,
B. A. ECKHART,
W. H. RUSSELL,
JOHN J. ALTPETER,

Joint Committee on Engineering and Finance."

(Enclosing communication and bill.)

FURTHER TIME FOR REPORT ON SPOILING OF MATERIAL EXCAVATED ON SECTION G, AND RETURN OF CERTAIN CHECKS DEPOSITED WITH BIDS FOR REGULATING WORKS.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, requesting further time for report on the matter of the spoiling of material excavated on Section G of the Main Channel, referred to that Committee at the meeting held November 6, 1895 (page 2912 of the Proceedings), and recommending the payment of estimates on said section until the final determination of the matter; said report also directing the Clerk to return

the checks deposited on November 20, 1895 (page 2944 of the Proceedings), with certain bids for the construction of Regulating Works on the Main Channel at Lockport, as provided in the report; and the report was read.

Mr. Cooley, seconded by Mr. Eckhart, moved that the report be adopted, ordered printed and placed on file, and the recommendations made therein concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, and the recommendations made therein concurred in.

The following is the

THE REPORT:

“CHICAGO, Nov. 27, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In regard to the communication of the Chief Engineer in reference to spoiling on Section G, referred to your Committee on Nov. 6, (see Proceedings, page 2912), the Committee has had the same under advisement and has granted hearings in the premises, and further time is requested. Until the matter is finally determined, we recommend that the estimates be paid.

In regard to the bids on Regulating Works, referred at last meeting (page 2944), your Committee recommend that the Clerk be directed to return all checks deposited, except those of the three low bidders.

Very respectfully submitted,

(Signed) L. E. COOLEY,
Chairman.

THOMAS KELLY,

B. A. ECKHART,

W. H. RUSSELL,

JOHN J. ALTPETER,

Joint Committee on Engineering and Finance.”

REPORT ON BUILDING OF CONCRETE RETAINING WALLS ON SECTION 15, AND SETTLEMENT OF PRICE FOR ROCK EXCAVATED ON SECTION D.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, transmitting agree-

ment, in duplicate, with Wright, Meysenburg, Sinclair & Carry, contractors for Section 15, for the construction of concrete, in place of cement masonry retaining walls on said section; and also with reference to and accompanied by report from the Chief Engineer, concerning the settlement of price for rock excavated on Section D, presented and referred to that Committee at the meeting held September 11, 1895 (page 2827 of the Proceedings), and transmitting agreement, in duplicate, with E. D. Smith & Co., contractors for said section, for the excavation of said rock; and further recommending that the President and Clerk be authorized and directed to execute, on behalf of the District, the agreements transmitted, as provided in the report; and the report and accompanying agreements were read.

Mr. Cooley, seconded by Mr. Eckhart, moved that the report be adopted, with accompanying agreements, ordered printed, and, with all enclosures, placed on file, the recommendations made in the report concurred in, and the President and Clerk authorized and directed to execute, on behalf of the District, the agreements transmitted, as provided in the report.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Russell and Wenter—six (6). Excused and not voting—Mr. Prendergast—one (1). Nays—None.

Upon which result the President declared the motion carried, the report adopted, with accompanying agreements, ordered printed, and, with all enclosures, placed on file; the recommendations made in the report concurred in, and the President and Clerk authorized and directed to execute, on behalf of the District, the agreements transmitted, as provided in the report.

The following is

THE REPORT, WITH ACCOMPANYING AGREEMENTS:

“CHICAGO, Nov. 27th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The Joint Committee on Engineering and Finance have for some time had under consideration the matter of the retaining walls on Section fifteen (15). As the work on said section progressed, the Chief Engineer found that there was no stone on said section of the quality and dimensions suitable for laying the wall in cement as specified in

the contract. The only alternatives were for the District itself to furnish the stone or to substitute a concrete wall for the one made of stone blocks, using for that purpose the broken stone on the section. The latter plan seemed preferable.

Your Committee have had many interviews with the contractors with reference to substituting for stone laid in cement, retaining walls of concrete, and have finally succeeded in agreeing with them upon the price of three dollars and forty (\$3.40) cents per cubic yard, which, in the opinion of your Committee, is reasonable, and is favorable to the District.

We have caused an agreement to be prepared in duplicate providing for the building of these Retaining Walls of concrete and transmit said copies herewith, and recommend that the President and Clerk be directed to execute same so soon as they shall have been executed by Wright, Meysenburg, Sinclair & Carry.

Your Committee have also had under consideration the fixing of a price for excavation of rock on Section D, referred to us upon a communication from the Chief Engineer (Proceedings, page 2827).

At the letting of the work upon said section it was not thought that any stone would be found thereon, and no estimate was made therefor, and no price fixed in said contract for excavating stone. The quantity of stone found upon the section is not large, and it is found in such varying thickness, from a few inches to six or seven feet, that the cost of taking it out will much exceed that of excavating rock of uniform depth and in large quantities.

Your committee have, however, succeeded in reaching an agreement with the contractors for said section at ninety-two and one-half ($92\frac{1}{2}$) cents per cubic yard, which is a little under the Engineer's estimate.

We transmit herewith a form of agreement, in duplicate, and recommend that the President and Clerk be directed to

execute the same on the part of the District.

Respectfully submitted,

(Signed)

L. E. COOLEY,
Chairman.

B. A. ECKHART,

THOMAS KELLY,

W. H. RUSSELL,

JOHN J. ALTPETER,

Joint Committee on Engineering and Finance."

(Accompanied by report and two agreements, in duplicate.)

The following are the

AGREEMENTS:

(Section 15.)

"*This Agreement, Made this day of A. D. 1895, by and between the Sanitary District of Chicago, party of the first part, and Augustine W. Wright, Otto W. Meysenburg, Donald Sinclair and Edward F. Carry, co-partners, doing business under the firm name and style of Wright, Meysenburg, Sinclair & Carry, party of the second part,*

Witnesseth, That, whereas, the parties hereto have heretofore entered into a contract, dated the 27th day of August, A. D. 1894, for the complete excavation and entire removal of earth, rock, glacial drift and other material by second party from that portion of the Main Drainage Channel of first party known and distinguished by the specifications in said contract contained, and the plans accompanying them as Section fifteen (15), together with the building of all collateral works, which, by the terms of said contract, are included in the same, and by the terms and provisions of said contract it is provided that second party shall wall the sides of the Channel to be excavated with stone laid in cement in accordance with detailed specifications in said contract set forth; provided, suitable

stone can be found in the excavation on said section which will conform to said specifications; and

WHEREAS, In the prosecution of the work of excavation on said section it has been determined that stone suitable for the building of retaining walls laid in cement cannot be obtained therefrom.

Now, therefore, In consideration of the mutual and respective undertakings hereof, it is hereby agreed and covenanted by and between the parties hereto as follows:

Second party agrees in lieu of the walls laid in cement, provided for in said contract, to build the retaining walls on said Section fifteen (15) of concrete, under the direction of the Chief Engineer of first party and strictly in accordance with the following specifications:

The concrete used in said walls shall consist of two (2) parts cement, seventy (70) pounds per cubic foot; of three (3) parts sand and of eight (8) parts broken stone; and each cubic yard of said concrete shall contain six and two tenths (6 2-10) cubic feet of cement, nine and three-tenths (9 3-10) cubic feet of sand and twenty-four and six-tenths (24 6-10) cubic feet of broken stone, or so much stone as in combination with the prescribed volumes of cement and sand shall make one cubic yard of monolithic concrete.

The stone shall be clean and sound and no stone which will not pass through a two inch ring shall be used.

The cement, sand and stone shall be mechanically mixed and thoroughly incorporated and to the satisfaction of the Chief Engineer, and sufficient water to be added thereto to cause the mass to quake slightly under ramming.

The concrete shall be placed in the forms in layers of twelve (12) inches in thickness and shall be compacted by ramming.

The entire wall up to an elevation of minus 9.00, Chicago datum, shall be built of the concrete hereinbefore specified. Above said elevation the body of the wall shall be built of the same concrete, but shall be faced and coped with three (3) inches of mortar, made of Portland cement, proportioned as follows: One part Portland cement, three parts sand.

All cement and sand shall conform to the specifications of the Sanitary District

in quality and strength, and shall pass the inspection prescribed in the specifications set forth in the contract for said Section fifteen (15).

The location and dimensions of said wall shall be as prescribed by the Chief Engineer, and all the specifications of said original contract as to retaining walls, so far as same are not changed or modified by said Engineer, or by this agreement, shall continue in force.

For said retaining walls made of concrete, as herein specified, second party shall receive in full compensation the sum of three dollars and forty cents (\$3.40) per cubic yard, measured in the walls.

In addition to the back filling of said walls prescribed in said original contract and included in the price herein fixed for walls, second party shall also bring the east levee on said section up to full grade and prism, and for such material as shall be added thereto for that purpose, shall be paid sixteen (16) cents per cubic yard.

It is further agreed that the time for the completion of the work on said Contract Section fifteen (15), as fixed in Section G of said original contract, including the construction of the wall herein provided for, is hereby extended to November 1, 1896.

In witness whereof, The Sanitary District of Chicago has caused this agreement to be signed by its President and attested by its Clerk, and its corporate seal to be hereto affixed, and the said party of the second part have hereunto set their hands and seals the day and year first above mentioned.

SANITARY DISTRICT OF CHICAGO.

By.....

President.

Attest:

.....

Clerk.

.....[SEAL.]

.....[SEAL.]

The undersigned, surety upon the bond given by said Wright, Meysenburg, Sinclair & Carry, party of the second part in the above agreement, for the faithful performance by them of the terms and conditions of the original contract between said parties for the work on said Section fifteen (15), hereby consents to the modifi-

cations of said original contract hereinabove provided for, and to the extension of time for the completion of said original contract, and expressly agrees that said modifications and extension of time shall in nowise alter or affect its liability as surety upon the bond of said contractor."

(Section D.)

"*This Agreement*, Made this..... day of November, A. D. 1895, by and between the Sanitary District of Chicago, party of the first part, and Erskine D. Smith, E. Eldridge Smith and Jones M. Jackson, doing business under the firm name and style of E. D. Smith & Company, party of the second part,

Witnesseth, That, whereas, said parties have heretofore entered into an agreement bearing date the twenty-sixth (26th) day of November, A. D. 1892, for the complete excavation and entire removal of earth, rock, glacial drift and other material from that portion of the Main Drainage Channel of first party, known and distinguished as Section D, together with the building of all collateral works which by the terms of said contract are included in same; and

WHEREAS, In the original estimate of approximate quantities of material to be excavated on said section, made by the Chief Engineer of first party, and furnished with the specifications accompanying the proposal for bids for the work on said section, no estimate for rock was made, and it was thought that no rock would be reached on said section, but in the development of the work of excavation thereon it is found that it will be necessary to remove considerable quantities of rock, for which class of work no price has been fixed in said original contract.

Now, therefore, In consideration of the mutual and respective undertakings heretofore, it is agreed and covenanted by the parties hereto, that second party shall receive and first party shall pay in full compensation for the entire excavation and removal from said Section D of the Main Channel of the rock found thereon, the sum of ninety-two and one-half (92½) cents per cubic yard measured in excavation. Wherever, in the opinion of the Chief Engineer of first party, the economical prosecution of the work requires the taking out

of a natural stratum of rock, a portion of which lies below the grade established for the bottom of said Channel, the whole of such stratum shall be included in the measurement of the rock excavated.

It is further agreed that all the terms, conditions and specifications of said original contract, relating to the excavation of rock, shall be in force and control in the carrying out of the work herein agreed upon.

In witness whereof, the said Sanitary District of Chicago has caused this agreement to be signed by its President and attested by its Clerk, and its corporate seal to be hereto affixed, and the said party of the second part have hereunto set their hands and seals the day and year first above written.

SANITARY DISTRICT OF CHICAGO,

By.....

President.

Attest:

.....

Clerk.

.....[SEAL.]

.....[SEAL.]"

REPORT ON REQUEST FOR LEASE OF
GROUND ON SECTION 10.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by a communication, enclosing sketch, from E. D. Smith & Co., requesting a lease of certain ground on Section 10, presented and referred to that Committee at the meeting held November 20, 1895, (page 2941 of the Proceedings), recommending that the request be granted, the Attorney instructed to prepare a suitable lease, and the President and Clerk authorized and directed to execute the same, on behalf of the District, as provided in the report; and the report was read.

Mr. Cooley, seconded by Mr. Altpeter, moved that the report be adopted, ordered printed, and, with enclosures, placed on file, the recommendations made in the report concurred in, the Attorney instructed and the President and Clerk authorized and directed as provided in the report.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and, with enclosures, placed on file; the recommendations made in the report concurred in, the Attorney instructed and the President and Clerk authorized and directed as provided in the report.

The following is

THE REPORT:

“CHICAGO, Nov. 27th, 1895.

To the Honorable Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—The communication of E. D. Smith & Company, referred to your Committee at the last meeting of your Honorable Body (Proceedings, page 2941), has been considered by us.

We recommend that the request made be granted, said lease to run for a period of three years, and that the Attorney be directed to prepare a suitable lease and the President and Clerk be directed to execute same on the part of the District.

The communication and accompanying sketch are herewith returned for filing.

Respectfully submitted,

(Signed) L. E. COOLEY,

Chairman.

B. A. ECKHART,

THOMAS KELLY,

W. H. RUSSELL,

JOHN J. ALTPETER,

Joint Committee on Engineering and Finance.”

(Enclosing communication and sketch.)

REPORT ON EXTENSIONS OF TIME AND WAIVERS OF CLAIMS ON CONTRACTS FOR SECTIONS 3, 6, 1, A, B, C AND G., AND EXTENSION OF TIME, WAIVER OF CLAIMS AND SAVING OF DIMENSION STONE ON SECTION 5.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, returning for filing the communications asking for extensions of time on contracts for Sections 3, 6, 1, A, B, C, G, H and 5, presented and referred to that Committee at the meetings held November 13 and 20, 1895 (pages 2919 and 2939 of the Proceedings); said report transmitting agreements in duplicate with the contractors for said

sections, providing for extensions of time and waiver of claims on their respective contracts (except Section H), the agreement on Section 5 also providing for the saving of dimension and backing stone, all as provided in the report and accompanying agreements; said report further recommending that the President and Clerk be authorized and directed to execute the agreements transmitted, on behalf of the District, as provided in the report; and the report was read.

Mr. Cooley, seconded by Mr. Kelly, moved that the report be adopted, with accompanying agreements, ordered printed, and, with all enclosures, placed on file, the recommendations made in the report concurred in, and the President and Clerk authorized and directed to execute the agreements transmitted, on behalf of the District, as provided in the report.

On roll-call the vote stood: Yeas—Messrs. Cooley, Eckhart, Kelly, Russell and Wenter—five (5). Excused and not voting—Mr. Altpeter—one (1). Nays—Mr. Prendergast—one (1).

Upon which result the President declared the motion carried, the report adopted, with the accompanying agreements, ordered printed, and, with all enclosures, placed on file, the recommendations made in the report concurred in, and the President and Clerk authorized and directed to execute the agreements transmitted, on behalf of the District, as provided in the report.

The following is

THE REPORT, WITH ACCOMPANYING AGREEMENTS:

“CHICAGO, Nov. 27, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago;

GENTLEMEN—At your meeting of November 13th (page 2919 of the Proceedings), requests from a number of contractors for an extension of the time of completion of their contracts were presented to your Honorable Body and by you referred to this Committee. A number of requests for extension from other contractors, made at your meeting of November 20th (page 2939 of the Proceedings), were also referred to us. We have considered each of these separately, and the grounds upon which they were respectively based, and recommend extensions of time for the completion of the

work on the contract sections for which requests have been made, as follows:

Section 3 to May 31st, 1896.

Section 6 to July 31st, 1896.

Sections 1, 5, A, B, C and G to November 30th, 1896.

We have caused agreements to be prepared by the Attorney, providing for such extensions of time, and for the consent thereto of the sureties on the bonds of the contractors, and submit same in duplicate for each of said sections.

Your Committee have also thought it desirable where claims of any kind had heretofore been made in connection with these contract sections, and disallowed by the Chief Engineer, to clear the record by embodying a formal waiver of such claims in connection with the agreement for extension of time.

The agreement herewith submitted for Section five (5) also provides for the preservation of dimension stone and stone suitable for backing and second class masonry.

We recommend that the President and Clerk be authorized and directed to execute said respective agreements on the part of the District, after the same shall have been executed by the respective contractors, and the consent of the sureties obtained thereto.

The several requests are returned herewith for filing.

Respectfully submitted,

(Signed) L. E. COOLEY,
Chairman.

B. A. ECKHART,
THOMAS KELLY,
W. H. RUSSELL,

Joint Committee on Engineering and Finance."

(Accompanied by eight (8) communications and eight (8) agreements, in duplicate.)

The following are

THE AGREEMENTS;

(Section 3)

"*This Agreement, Made this 25th day of November, A. D. 1895, by and between the Sanitary District of Chicago, party of the first part and Charles E. Gilman and Edwin McNeil, doing business under the firm name and style of Gilman & Company, party of the second part,*

Witnesseth, That, whereas, said parties have heretofore entered into an agreement bearing date the first day of November, A. D. 1893, for the complete excavation and entire removal of earth, rock, glacial drift and other material from that portion of the Main Drainage Channel of first party, known and distinguished as Section three together with the building of all collateral works which by the terms of said contract are included in same, and the time fixed in said contract for the completion of the work called for thereunder with such extension as is provided therein will expire April 30th, 1896; and

WHEREAS, Second party by a written communication bearing date the 13th day of November, A. D. 1895, have requested that the time for the completion of the work on said Section three be extended.

Now therefore, in consideration of the mutual and respective undertakings hereof it is hereby agreed and covenanted by and between the parties hereto that the time for the completion of the work specified in said original contract together with any modifications thereof subsequently agreed upon be and the same is hereby extended to the 31st day of May A. D. 1896.

In witness whereof, on the day and year first above written, the said Sanitary District of Chicago has caused this agreement to be signed by its President and attested by its Clerk, and its corporate seal to be hereto affixed and the said party of the second part have hereunto set their hands and seals.

SANITARY DISTRICT OF CHICAGO.

By

President.

Attest:

.....

Clerk.

.....[SEAL]

.....[SEAL]

The undersigned surety upon the bond given by Gilman & Company, party of the second part in the above agreement, for the faithful performance by them of the terms and conditions of the original contract between said parties for the work on said Section three hereby consents to the extension of time hereinabove provided for the completion of said original contract

and expressly agrees that said extension shall in nowise alter or affect its liability as surety upon the bond of said contractor."

(Section 6.)

"*This Agreement*, Made this 25th day of November, A. D. 1895, by and between the Sanitary District of Chicago, party of the first part, and Horatio P. Mason, Charles E. Hoge, John King and Harry B. Hanger, doing business under the firm name and style of Mason, Hoge & Company, party of the second part,

Witnesseth, That, whereas, second party heretofore to-wit on the 20th day of April, A. D. 1894, by and with the consent of first party, took to themselves by assignment a contract theretofore entered into between first party and Agnew & Company for the complete excavation and entire removal of earth, rock, glacial drift and other material from that portion of the Main Drainage Channel of first party known and distinguished as Section Six, together with the building of all collateral works which by the terms of said contract are included in same, and agreed faithfully to carry out and perform all the terms and conditions thereof, together with such modifications as were then and there agreed upon, and the time fixed at the date of said assignment for the completion of the work called for under said contract will expire May 31st, 1896; and,

WHEREAS, Second party, by a written communication bearing date the 20th day of November, A. D. 1895, have requested that the time for the completion of the work on said Section Six (6) be extended for a period of two months,

Now, therefore, in consideration of the mutual and respective undertakings hereof it is hereby agreed and covenanted by and between the parties hereto that the time for the completion of the work specified in said original contract, together with any modifications thereof subsequently agreed upon, be and the same is hereby extended to the 31st day of July, A. D. 1896.

In witness whereof, on the day and year first above written, the said Sanitary District of Chicago has caused this agreement to be signed by its President and attested by its Clerk, and its corporate seal to be hereto affixed, and the said party of the

second part have hereunto set their hands and seals.

THE SANITARY DISTRICT OF CHICAGO.

By

President.

Attest:

.....

Clerk.

..... [SEAL]

..... [SEAL]

..... [SEAL]

..... [SEAL]

The undersigned surety upon the bond given by Mason, Hoge & Company, party of the second part in the above agreement, for the faithful performance by them of the terms and conditions of the original contract between said parties for the work on said Section Six (6), hereby consents to the extension of time hereinabove provided for the completion of said original contract, and expressly agrees that said extension shall in nowise alter or affect its liability as surety upon the bond of said contractors."

(Section 1.)

"*This Agreement*, Made this 25th day of November, A. D. 1895, by and between the Sanitary District of Chicago, party of the first part and John Griffiths and Michael McDermott, doing business under the firm name and style of Griffiths & McDermott, party of the second part,

Witnesseth, that, whereas, said parties have heretofore entered into an agreement bearing date the 23d day of May, A. D. 1894, for the complete excavation and entire removal of earth, rock, glacial drift and other material from that portion of the Main Drainage Channel of the first party known and distinguished as Section One, together with the building of all collateral works which by the terms of said contract are included in same, and the time fixed in said contract for the completion of the work called for thereunder, with such extension as is provided therein, will expire June 30th, 1896, and,

WHEREAS, Second party by a written communication bearing date the 12th day of November, A. D. 1895, have, for the reasons therein stated, requested that the

time for the completion of the work on Section One be extended.

Now, therefore, in consideration of the mutual and respective undertakings hereof, it is hereby agreed and covenanted by and between the parties hereto, that the time for the completion of the work specified in said original contract, together with in any modifications thereof subsequently agreed upon, be and the same is hereby extended to the 30th day of November, A. D. 1896.

In consideration of said extension of time, second party hereby relinquishes and waives all claims made by them against first party for damage to the trestle on said section.

In witness whereof, on the day and year first above written, the said Sanitary District of Chicago has caused this agreement to be signed by its President and attested by its Clerk, and its corporate seal to be hereto affixed, and the said party of the second part has hereunto set its hand and seal.

THE SANITARY DISTRICT OF CHICAGO,

By.....

President.

Attest:

.....

Clerk.

.....[SEAL.]

The undersigned surety upon the bonds given by said Griffiths and McDermott, party of the second part in the above agreement, for the faithful performance by them of the terms and conditions of the original contract between said parties for the work on said Section one, hereby consents to the extension of time hereinabove provided for the completion of said original contract, and expressly agrees that the said extension shall in nowise alter or effect its liability as surety upon the bond of said contractor."

(Section 5.)

"This Agreement, Made this 25th day of November, A. D., 1895, by and between the Sanitary District of Chicago, party of the first part, and the Qualey Construction Company, a corporation organized under the laws of the State of Illinois, party of the second part,

Witnesseth, That whereas, second party

heretofore, to-wit, on the 17th day of January, A. D. 1894, took to itself by assignment, with the consent of first party, a contract theretofore entered into between first party and Agnew & Co. for the complete excavation and entire removal of earth, rock, glacial drift and other material from that portion of the Main Drainage Channel of first party, known and distinguished as Section five, together with the building of all collateral works which, by the terms of said contract, are included in same, and agreed faithfully to carry out and perform all the terms and conditions of said contract, together with such modifications thereof as were then and there agreed upon, and the time fixed at the date of said assignment for the completion of the work called for under said contract will expire April 30, 1896, and second party, by a written communication bearing date the 15th day of November, A. D. 1895, has requested that the time for the completion of the work on said Section five be extended; and

WHEREAS, In the prosecution of the work upon said section, rock suitable for dimension stone has been found, which first party is desirous of preserving for future use.

Now, therefore, in consideration of the mutual and respective undertakings hereof it is hereby agreed and covenanted by and between the parties hereto as follows:

First—Second party shall quarry on said section stone suitable for dimension stone in such manner as will preserve the natural courses and of such dimensions as to surface beds as shall be designated by the Chief Engineer of first party, provided that the mass of any stone shall not be greater than can be handled by the best class of hoisting machinery commonly used in the Lemont quarries. No course thinner than eight inches nor thicker than thirty-six inches shall be quarried and estimated for payment in excess of the original contract price. The width of stone shall never be less than one and one-half times the depth of the course. In estimating for payment only that portion of the mass which comes between parallel faces shall be considered. All stone shall be sound and of good quality and subject to the inspection and acceptance of the Chief Engineer or his duly authorized agent.

Second—Second party shall also quarry

and preserve under the direction of said Chief Engineer *stone suitable for backing and second-class masonry*. Such stone shall comply with the specifications for dimension stone as to thickness of courses, but will be in smaller masses. No stone shall be accepted under this classification which is in length less than two and one-half times the depth, nor in width less than the depth. In estimating for payment only that portion of the mass which is included between parallel faces shall be considered. All stone shall be sound and of good quality, subject to the inspection and acceptance of said Chief Engineer or his duly authorized representative.

All stone of both the classes herein specified shall be piled upon the right of way of the Sanitary District, at points designated by said Engineer, in such manner as to secure even bearings, and avoid the breaking of stone in lower layers under the weight of stone above. All scantling or other blocking used in piling shall be supplied by the contractor free of cost to the District. Said stone may be piled on each side of the Channel, under the direction of the Chief Engineer, not nearer than twenty-five (25) feet from the inner edge of the wall; provided, that if so spoiled on each side of said Channel, second party shall at its own cost build a temporary trestle at some point convenient for transferring across the Channel such stone as may be piled northerly thereof, and of sufficient strength for that purpose, and that at the expiration of the work on said section, said trestle shall be left thereon and become the property of first party.

Third—For all dimension stone saved by second party, in accordance with the specifications in paragraph "first," second party shall receive the sum of one (\$1.00) dollar per cubic yard for each yard so excavated and deposited as prescribed, in addition to the regular contract price for rock excavation on said section; and for all stone suitable for backing and second class masonry saved by second party, in accordance with the specifications in paragraph "second," second party shall receive the sum of fifty (50c) cents per cubic yard for each yard so excavated and deposited as prescribed, in addition to the regular contract price for excavation. Measurement for such extra payment shall be based upon the net contents of each block. The dimensions of

each block shall be carefully recorded by said Chief Engineer or his assistants or agents.

Fourth—The time for the completion of the work specified in the original contract for the excavation upon said section, together with any modifications thereof, subsequently agreed upon, is hereby extended to November 30, 1896.

Fifth—Second party hereby accepts the ruling of said Chief Engineer whereby the cement masonry wall between stations and on said section was rejected, and agrees to take down and rebuild same in conformity to the specifications within the time herein fixed for the completion of the work on said section.

In witness whereof, On the day and year first above written, the parties hereto have caused this agreement to be signed by their respective officers thereunto duly authorized, and their respective seals to be hereto affixed.

SANITARY DISTRICT OF CHICAGO.

By
 President.

Attest:

.....
 Clerk.
[SEAL]
[SEAL]

The undersigned surety upon the bond given by The Qualey Construction Company, party of the second part in the above agreement, for the faithful performance by them of the terms and conditions of the original contract between said parties for the work on said Section five hereby consents to the extension of time hereinabove provided for the completion of said original contract and expressly agrees that said extension shall in nowise affect or alter its liability as surety upon the bond of said contractor."

(Section A.)

"This Agreement, Made this 25th day of November, A. D. 1895, by and between the Sanitary District of Chicago, party of the first part, and Ernst Heldmaier and Peter W. Neu, doing business under the firm name and style of Heldmaier & Neu, party of the second part,

Witnesseth, That, whereas, second party,

together with one Lewis D. Conner, heretofore entered into an agreement with first party bearing date the first day of February, A. D. 1893, for the complete excavation and entire removal of earth, rock, glacial drift and other material from that portion of the Main Drainage Channel of first party, known and distinguished as Section A, together with the building of all collateral works which by the terms of said contract are included in same, which said contract, with consent of first party, was duly assigned to second party, and the time fixed in said contract for the completion of the work called for thereunder, with such extension as is provided therein, will expire April 30th, 1896; and,

WHEREAS, Second party, by a written communication bearing date the 13th day of November, A. D. 1895, have requested that the time for the completion of the work on said Section A be extended,

Now, therefore, In consideration of the mutual and respective undertakings hereof it is hereby agreed and covenanted by and between the parties hereto that the time for the completion of the work specified in said original contract, together within any modifications thereof subsequently agreed upon, be and the same is hereby extended to the 30th day of November, A. D. 1896.

In witness whereof, On the day and year first above written, the said Sanitary District of Chicago has caused this agreement to be signed by its President and attested by its Clerk, and its corporate seal hereto to be affixed, and the said party of the second part have hereunto set their hands and seals.

SANITARY DISTRICT OF CHICAGO.

By.....
President.

Attest:

.....
Clerk.

.....[SEAL.]

.....[SEAL.]

The undersigned, surety upon the bond given by Heldmaier & Neu, party of the second part, in the above agreement, for the faithful performance by them of the terms and conditions of the original contract between said parties for the work on said Section A, hereby consents to the extension of time hereinabove provided, for

the completion of said original contract, and expressly agrees that said extension shall in nowise alter or affect its liability as surety upon the bond of said contractor."

(Section B.)

"This Agreement, Made this 25th day of November, A. D. 1895, by and between the Sanitary District of Chicago, party of the first part, and Ernst Heldmaier and Peter W. Neu, doing business under the firm name and style of Heldmaier & Neu, party of the second part,

Witnesseth, That, whereas, second party, together with one Lewis D. Conner, heretofore entered into an agreement with first party bearing date the 1st day of February, A. D. 1893, for the complete excavation and entire removal of earth, rock, glacial drift and other material from that portion of the Main Drainage Channel of first party known and distinguished as Section B, together with the building of all collateral works which by the terms of said contract are included in same, which said contract with consent of first party was duly assigned to second party, and the time fixed in said contract for the completion of the work, called for thereunder, with such extension as is provided therein, will expire April 30th, 1896, and

WHEREAS, Second party, by a written communication bearing date the 13th day of November, A. D. 1895, have requested that the time for the completion of the work on said Section B, be extended, and

WHEREAS, In the prosecution of the work of building the levee on Sections B and A from material taken from said Section B, first party had erected a trestle on Section A for the use of second party in said work, which second party was to maintain in repair, and thereafter second party had to replace a portion of said trestle, but was under the ruling of the Chief Engineer not able to make use thereof to the full extent expected, and by communications heretofore made to the Board of Trustees of first party have made claim for compensation therefor;

Now, therefore, In consideration of the mutual and respective undertakings hereof it is hereby agreed and covenanted by and between the parties hereto that the time for the completion of the work specified in said original contract, together with any

modifications thereof subsequently agreed upon, be and the same is hereby extended to the 30th day of November, A. D. 1896.

In consideration of such extension of time and of the payment to second party of the amount of percentage retained by first party under Clause J of the contract for said Section B, second party hereby relinquishes and waives all claims heretofore made against first party for compensation for the construction of the trestle on the line of the levee on Section A.

In witness whereof, On the day and year first above written, the said Sanitary District of Chicago has caused this agreement to be signed by its President, and attested by its Clerk, and its corporate seal to be hereto affixed, and the said party of the second part have hereunto set their hands and seals.

SANITARY DISTRICT OF CHICAGO,

By

President.

Attest:

.....

Clerk.

.....[SEAL.]

.....[SEAL.]

The undersigned surety upon the bond given by said Heldmaier & Neu, party of the second party in the above agreement, for the faithful performance by them of the terms and conditions of the original contract between said parties for the work on said Section B hereby consents to the extension of time hereinabove provided for the completion of said original contract and expressly agrees that said extension shall in nowise alter or affect its liability as surety upon the bond of said contractor."

(Section C.)

"*This Agreement*, Made this 25th day of November, A. D. 1895, by and between the Sanitary District of Chicago, party of the first part, and the Western Dredging and Improvement Company, a corporation organized under the laws of the State of Indiana, party of the second part,

Witnesseth, That, whereas, said parties have heretofore entered into an agreement, bearing date the 31st day of January, A. D. 1893, for the complete excavation and entire removal of earth, rock, glacial drift

and other material from that portion of the Main Drainage Channel of first party, and known and distinguished as Section C, together with the building of all collateral works which by the terms of said contract are included in same, and the time fixed in said contract for the completion of the work called for thereunder, with such extension as is provided therein, will expire April 30th, 1896, and

Whereas, Second party, by a written communication bearing date the 13th day of November, A. D. 1895, have requested that the time for the completion of the work on said Section C be extended,

Now, therefore, In consideration of the mutual and respective undertakings hereof, it is hereby agreed and covenanted by and between the parties hereto that the time for the completion of the work specified in said original contract, together with any modifications thereof subsequently agreed upon, be and the same is hereby extended to the 30th day of November, A. D. 1896.

In consideration of said extension of time second party hereby relinquishes and waives all claims heretofore made by them for reclassification of material excavated on account of so-called hard material.

In witness whereof, on the day and year first above written, the parties hereto have caused this agreement to be signed by their respective officers thereunto duly authorized and their respective corporate seals to be hereto affixed.

THE SANITARY DISTRICT OF CHICAGO.

By

President.

Attest:

.....

Clerk.

.....[SEAL.]

The undersigned surety upon the bond given by the Western Dredging and Improvement Company, party of the second part in the above agreement, for the faithful performance by them of the terms and conditions of the original contract between said parties for the work on said Section C hereby consents to the extension of time hereinabove provided for the completion of said original contract and expressly agrees that said extension shall in nowise alter or effect its liability as surety upon the bond of said contractor."

(Section G.)

"*This Agreement*, Made this 25th day of November, A. D. 1895, by and between the Sanitary District of Chicago, party of the first part, and Thomas Gahan and Thomas Byrne, doing business under the firm name and style of Gahan & Byrne, party of the second part,

Witnesseth, That, whereas, said parties have heretofore entered into an agreement bearing date the 27th day of December, A. D. 1893, for the complete excavation and entire removal of earth, rock, glacial drift and other material from that portion of the Main Drainage Channel of first party known and distinguished as Section G, together with the building of all collateral works, which by the terms of said contract are included in same, and the time fixed in said contract for the completion of the work called for thereunder, with such extension as is provided therein, will expire May 31st, 1896; and

WHEREAS, Second party by a written communication, bearing date of the 18th day of November, A. D. 1895, have requested that the time for the completion of the work on said Section G be extended;

Now, therefore, In consideration of the mutual and respective undertakings heretofore, it is hereby agreed and covenanted by and between the parties hereto that the time for the completion of the work specified in said original contract, together within any modifications thereof, subsequently agreed upon, be and the same is hereby extended to the 30th day of November, A. D. 1896.

In witness whereof, on the day and year first above written, the said Sanitary District of Chicago has caused this agreement to be signed by its President and attested by its Clerk, and its corporate seal to be hereto affixed, and the said party of the second part have hereunto set their hands and seals.

SANITARY DISTRICT OF CHICAGO,

By

President.

Attest:

.....

Clerk.

.....[SEAL]

.....[SEAL]

The undersigned surety upon the bond given by Gahan & Byrne, party of the second part in the above agreement, for the faithful performance by them of the terms and conditions of the original contract between said parties for the work on said Section G, hereby consents to the extension of time hereinabove provided for the completion of said original contract, and expressly agrees that said extension shall in no wise alter or affect its liability as surety upon the bond of said contractors."

REPORT ON PROPOSITION FOR FURNISHING OF PROCEEDINGS OF "CLEVELAND DEEP WATERWAYS CONVENTION."

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by message of the President, transmitting communication from Frank A. Flower, Secretary of the International Deep Waterways Association, making proposition for the furnishing of copies of the Proceedings of the "Cleveland Deep Waterways Convention," presented and referred to that Committee at the meeting held November 20, 1895 (page 2934 of the Proceedings), recommending the purchase of 500 copies of said Proceedings, as provided in the report: and the report was read.

Mr. Cooley, seconded by Mr. Russell, moved that the report be adopted, ordered printed, and, with enclosures, placed on file, and the recommendation made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and, with enclosures, placed on file, and the recommendations made in the report concurred in.

The following is

THE REPORT:

"CHICAGO, Nov. 27, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In regard to the communication of Frank A. Flower, Secretary of the International Deep Waterways Association, transmitted with favorable recommendation by the President at the last meeting and referred to this Com-

mitter (see page 2934 of Proceedings), we recommend that the Clerk be authorized to subscribe for five hundred (500) volumes of the Proceedings of the Cleveland Convention, at sixty (60) cents per volume, payable through J. S. Dunham, Treasurer of the Association.

The message and communication are returned herewith for filing.

Very respectfully submitted,

(Signed) L. E. COOLEY,
Chairman.

B. A. ECKHART,

THOMAS KELLY,

W. H. RUSSELL,

JOHN J. ALTPETER,

Joint Committee on Engineering and Finance."

(Enclosing message and communication.)

ADJOURNMENT TO SPECIAL TIME.

Mr. Eckhart, seconded by Mr. Kelly, moved that when the Board adjourn, it do adjourn to meet on Monday, December 2, 1895, at 12:30 o'clock P. M.

The motion prevailed unanimously, and it was so ordered.

COMMUNICATION ON SPOILING OF MATERIAL ON SECTION H.

The Clerk presented a communication from Gahan & Byrne, Contractors for Section H, requesting permission to spoil material excavated from said section on one side of the Channel, under conditions as set forth in the communication; and the communication was read.

Mr. Kelly, seconded by Mr. Eckhart, moved that the communication be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the communication was ordered printed and so referred.

The following is

THE COMMUNICATION:

"CHICAGO, Nov. 27th, 1895.

To the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—We hereby respectfully desire to state, that with reference to the

spoiling on Section H, of the Main Drainage Channel now being excavated by us, we commenced to spoil on the north side of the Channel something more than a year ago, and during the present season, since about the first of June, our machinery was so constructed that it could spoil nowhere else. We were permitted by the Board to continue spoiling in that way until we received a notice a short time since from the Chief Engineer, directing us to spoil sixty per cent on the north side and forty per cent on the south side of the Channel.

We are very clearly of the opinion that to spoil on the south side of the Channel, at the point where we are now at work with our large machine, would be very dangerous, as we are satisfied that to spoil there would cause the bank to cave in.

It will work a great hardship to us to be compelled to change the manner of spoiling, and as we only desire to proceed three hundred and fifty (350) feet north to spoil in the manner we have been; we feel that so long as the Board has permitted us to go so far without any notice not to do so, we ought to be permitted to proceed the remaining three hundred and fifty feet; nor do we think it is fair to compel us to assume the responsibility of spoiling on the north side of the Channel, for there is no limit of time for which we are to assume this responsibility, and it would be manifestly unfair to compel us to assume this responsibility for all time.

We, therefore respectfully request your Honorable Board to permit us to spoil as we have been doing in the past upon that side of the Channel where our large machine is at work for the distance of three hundred and fifty feet from where we now are.

Trusting that you will consider this application favorably, we remain,

Very respectfully yours,

(Signed) GAHAN & BYRNE."

ADJOURNMENT.

On motion of Mr. Kelly, seconded by Mr. Eckhart, the Board then adjourned to Monday, December 2, 1895, at 12:30 o'clock P. M., pursuant to motion.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

DECEMBER 2, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

ADJOURNED MEETING.

The adjourned session of the two hundred and ninety-first regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Monday, December 2, 1895, at 12:30 o'clock P. M., pursuant to motion.

President Wenter called the Board to order.

On roll-call Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—eight (8) members, were present.

MINUTES.

Mr. Boldenweck, seconded by Mr. Kelly, moved that the minutes of the

regular meeting held November 27, 1895, be approved as printed, with the following amendment:

In the forty-third and fifty-first lines, second column, page 2956, and the twenty-eighth line, first column, page 2957, the words "Section G" should read "Section H."

The motion prevailed unanimously, and it was so ordered.

ANNUAL MESSAGE OF PRESIDENT WENTER.

The President then presented and read his annual message, which was accompanied by reports from the Clerk, Chief Engineer, Attorney, Treasurer, Marshal and Labor Statistician.

Mr. Boldenweck, seconded by Mr. Kelly, moved that the message and enclosures be ordered printed and placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE MESSAGE, WITH ACCOMPANYING REPORTS AND TABLES:

“CHICAGO, Dec. 2, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have the honor to herewith submit to your Honorable Body my fourth and last annual message. In doing so I will not mention all the endless details in connection with this great work but simply transmit a summary of the most important occurrences in the history of this mighty undertaking.

Six years have passed since I had the honor of being elected one of the first Trustees charged with carrying out the Sanitary District Act, one of the nine men entrusted with the execution of this greatest of works ever undertaken by any municipal corporation. As I review the events of those six years, as far as my memory can grasp them, I feel as though not six, but twenty years had passed away.

Coexistent with the first election of Trustees was an aroused public feeling. The taxpayer, alert for his own interest and to a large extent unacquainted with the taxing powers of the District, and with the extent and magnitude of this enterprise, sought safety in the election of a Citizens' ticket. The uncertainty in the political field often makes the citizens who pay taxes seek a harbor of refuge in the support of such movements, believing that their interests will thereby be best taken care of, only to discover, too late, their mistake.

At the election of six years ago, six Trustees were elected on the Citizens ticket; my own party elected three, while all the candidates on the Republican ticket were defeated.

I need not recall the strenuous efforts and trials of the minority in their attempt to carry out the will of the people. I believe that the Board as then constituted has gone down to history. It may have been that the construction of a work of this magnitude, in an entirely new field, with no precedent to follow, requiring original thought and energetic action, forbade progress when there was no cohesion in the elements of the Board, and when some of the members believed this work could never be completed.

In view of all this, it was hardly surprising that after nearly two years the entire Board collapsed, four Trustees resigning their offices. Those members who were energetic and sincere, but who

never had the power to execute, then made themselves felt, and, with the co-operation of the newly elected members, lines were formed with the sole end in view of meeting the expectations of the people—constructing the Channel and carrying out the spirit of the law.

Classified from a political standpoint, the members of the original Board of Trustees on the Citizens' ticket, were three Republicans, two Democrats and one Labor Representative. The three Republicans resigned and were succeeded by two Republicans and one Democrat. Of the Democrats, one member resigned and was succeeded by a Democrat. Consequently, when the Board reorganized in 1891, there were five Democrats, two Republicans and one Labor representative. In the fall of 1892 another Democrat was elected, making the full Board of nine members.

It may be said to the credit of my party that with an overwhelming majority, fully able to control the Board, to make every man employed a part of a powerful machine, and require him to do service as dictated by that machine, with an almost unlimited amount of money in sight, and with the power to employ from six to ten thousand men, no advantage was taken of that large majority, and every consideration was given to the two Republican members.

I then took the firm and sound position, which was concurred in by the majority of the Democratic members of the Board, that to insure success, this work must be carried out on strict business principles, thereby making the taxpayers of the District feel that their money would be economically expended, and that the men employed would do a full day's work and earn their money.

Temporary party advantage was put aside, and I am proud to state that this was not prompted nor brought about by any outside influence. It was simply dictated by sound business sense.

The members of the present Board, whose term of office expires to-day, have accomplished a wonderful piece of work. They have demonstrated that municipal government can be carried on on a strict business basis. They have solved some of the most knotty problems that were ever before encountered in a public work. The names of the members who retire from this Board, particularly of those who have been active, should be enrolled in a scroll of honor when this great work is finished and the cap-stone placed on the Regulating Works.

Beginning four years ago with but little information, with a pessimistic and critical public as a spectator, it required perseverance and nerve on the part of the Trustees who were charged with the execution of the work and upon whose shoulders rested the responsibility. But perseverance and push mastered the situation.

In place of the then wild and desolate valley, with a tortuous river covering its full width, we see to-day a mighty Channel, twenty-eight miles long, with a River Diversion of sixteen miles—a work towards the success of which anyone connected with the District, be he Trustee or officer, may be proud of having done a share.

The first contracts, Sections 1 to 14, were let in June, 1892, and bids for the last work on the Main Channel, the Regulating Works on Section 15, were opened November 20, 1895. The first shovel of earth was lifted on the 3rd of September, 1892, in the presence of a mighty concourse of people, as a sign of the official inauguration of the work. The total amount of the contract work on the entire Channel, not including bridges and masonry for same, is nearly \$19,000,000.

The first section in the rock was finished July 4, 1895. September 3, 1895, the anniversary of "Shovel Day," Section 10, one of the most gigantic rock sections on the line, was finished, and on that auspicious occasion a tablet was placed in the wall of the Channel, and the Board took official recognition of this event by inviting a large number of Chicago's representative citizens to be present to witness the setting of the tablet, Judge McConnell delivering the address.

At the present time two rock and two earth sections are entirely finished, with six other sections nearly completed. The total work done on the entire Channel to date amounts to over 75 per cent of the whole.

The total receipts of the District from date of organization to December 1, 1895, were \$18,941,529.22, as follows:

RECEIPTS.

Engineering Department.....	\$ 3,795 07
Construction Account.....	80,041 60
Loans.....	100,000 00
Tax Account.....	5,403,513 73
Bonds.....	12,000,000 00
Bond Interest and Premium Acct....	150,035 23
Law Department.....	1,790 00
Land Account.....	35,480 03

Interest Acct. (November estimated) \$	177,333 86
General Account.....	8,160 50
*Tax Levy, 1895.....	981,379 31
Total.....	\$18,941,529 33

*Warrants, with interest coupons attached, drawn against the Tax Levy of 1895.

The total expenditures for the entire work from its inception to December 1, 1895, were \$17,818,938.54, as follows:

EXPENDITURES.

Engineering Department.....	\$ 760,236 59
Construction Account.....	12,464,164 11
Clerical Department.....	49,522 17
Treasury Department.....	7,922 75
Interest on Loans.....	2,163 52
Loans Repaid.....	100,000 00
Law Department.....	216,995 05
Land Account.....	2,524,599 10
General Account.....	260,498 09
Bonds Retired.....	600,000 00
Bond Interest and Premium.....	718,750 00
Police Department.....	114,093 16
Total.....	\$17,818,938 54
Balance.....	11,122,590 79
Total.....	\$18,941,529 33

†\$855,000 of this balance is the remainder of the amount appropriated for the payment of Bonds and Interest on Bonds and Tax Warrants.

The Sanitary District owns 6,563 acres of land, stretching over the territory from Robey street in this city down to the City of Joliet, a strip of land varying in width from 800 to 4,000 feet. While at present much cannot be realized on this land, the time will come when with good business management this property will have an immense value and will yield a large revenue.

This city is steadily growing, and as the great Mississippi Valley increases in population, Chicago, the metropolis of this mighty basin, will in time become the largest city in the Western Hemisphere.

The growth of the city for the last fifteen or twenty years has extended to the west and southwest perhaps more in proportion than in any other direction, and the valley of the Desplaines, through which this mighty channel runs, before many years have passed, will see factories, elevators and docks along the canal, with residences nestled on the hill-sides to satisfy the immense growth of Chicago's future population.

In the past, the municipality has not foreseen its wonderful growth. Otherwise we would not have sold the im-

mense amount of school land owned by the City of Chicago, which was disposed of during its early history at a mere bagatelle. Had only fifty per cent of this land been kept, the revenue which could to day be derived from it would educate thousands and thousands of children, and thereby lighten the burden of the taxpayer.

Skepticism, more predominant at the earlier stages of this work than now, was expressed as to the probability of this Channel doing the work for which it was originally designed—the carrying off of Chicago's sewage. To the skeptics it can be said that while some of their objections might be sound, yet in place of the present project they have not substituted any plan that is more feasible and less expensive, not alone to execute but to maintain.

Early in 1880, a committee of citizens, headed by John B. Sherman and others, had sufficient foresight to recognize the fact that Chicago must adopt a system that should be a ground-work for the future development of a permanent sewerage system.

They engaged an engineer, Mr. Matthewson, of Joliet, who associated with himself some other gentlemen, whose plan was to build a canal on a smaller scale than that now being constructed. A report was submitted, but Chicago was not ripe for the improvement. It did not yet see the full necessity, although it existed to almost the same extent then as now, and the matter was dropped.

Five years later, patriotic citizens foreseeing the future of Chicago, again took up this question, and through their agitation, the City of Chicago appointed the so-called Hering Commission, consisting of Rudolph Hering, Benezette Williams, Samuel G. Artingstall, with Lyman E. Cooley as Principal Assistant.

After a preliminary examination and research, this Commission made a report, in which they suggested three plans for the disposition of the city's sewage: One to force the sewage on a large tract of land somewhere south of Chicago; another to force the sewage into Lake Michigan and remove the waterworks to the north of the city, near Evanston, and third, the present project as now being carried out.

The latter was not only considered the cheapest in first cost, but in cost of maintenance, whereas the other schemes involved an immense first cost, as well as expensive maintenance. It is true

that this mighty enterprise will cost Chicago a large sum of money. The Main Channel, which may be looked upon as the Main Trunk Line, will cost not less than \$28,000,000. As the city grows the system must be further extended. But Chicago should not complain for she neglected the cleaning of her back yards until she had a million of people.

No preparations or efforts were made along in the seventies when she had less than half a million, though far-sighted citizens gave warnings then and saw the time coming when this great question must be solved. So that though this expenditure may fall hard on the city now, yet it is an absolute necessity, more necessary than any made in the past. It means cleanliness, and cleanliness means good health.

Chicago expended from twenty-five to thirty million dollars for a World's Fair, to put on a fine outer garment to show to the outside world. She should not complain now if it is necessary to spend even forty million dollars for a permanent improvement to maintain the health of the city and to sustain the low death rate of the past years.

The Board may congratulate itself in its wise selection of executive officers in the various departments. The Engineering Department is the most important, being the very foundation of this mighty work. The level of the Engineer has located the stakes, and revealed the topography of the territory traversed by this Channel.

Benezette Williams acted as the first Chief Engineer after the reorganization of the Board in 1891, and it was he who laid out and submitted the first report on the location of the line of the Channel from Willow Springs to Lockport, including Sections 1 to 14. While as a whole his recommendations were not adopted, yet his reports are valuable and his name deserves mention.

After the resignation of Mr. Williams in 1893, Mr. Isham Randolph, the present incumbent, was elected. He has been identified with the enterprise up to the present time, and his service with the District has extended through a period of most energetic prosecution of this work. His experience prior to his connection with the District has enabled him to solve, with the assistance of his brother engineers, many knotty problems.

Thomas T. Johnston, his Chief Assistant, has rendered valuable service to the

District, and U. W. Weston, the Superintendent of Construction, has more than fulfilled every expectation of the Trustees in a thorough supervision of the work.

The Law Department has had able men to attend to the affairs and legal problems of the Sanitary District. Orrin N. Carter was not only a good lawyer, but had also the unique qualification of assisting in bringing those elements together which were essential to a thorough and energetic prosecution of the work. George E. Dawson, the present Attorney, is capable and accurate, and a safe counsellor for the District. Both gentlemen deserve mention.

In mentioning those two gentlemen, I cannot forget the General Counsel, Mr. John P. Wilson, who when great and intricate legal problems were encountered has always held himself in readiness to find a way out of the difficulties.

Thomas F. Judge, the head of the Clerical Department, is at all times loyal; his department is and always has been a model of perfection, and by reason of his connection with the District almost from the time it was organized, he is an encyclopedia of its affairs.

Melville E. Stone, the Treasurer of the District, following the laudable example of his predecessor, Byron L. Smith, has served without compensation, all interest on the funds of the District being turned into the treasury, in accordance with the tacit understanding that this should be done.

The Marshal of the District, Mr. Edward Williams, has commanded well. The police force, though small, has been a model one as to discipline, general efficiency and outward appearance.

Dr. William Martin, who but recently resigned his position, has made a splendid record as Sanitary Inspector. His experience in the army aided him much in the performance of his duties.

It is not necessary to again relate the immense amount of time and energetic work devoted to the interests of the District by the active members of the Board. From the time of its reorganization to the present date, the committees of the Board, particularly those on Engineering, Finance and Judiciary, were constantly engaged in the consideration of problems referred to them.

The preparatory work necessary to the commencement of practical operations required first of all a thorough knowledge of the proposed line of the Chan-

nel from Chicago to Lockport. The organization of a thorough corps of Engineers, under the immediate control of the Chief Engineer and his assistants, and of the Committee on Engineering, was one of very great importance, for the information as to the subsoil of the line had more or less to do with its location.

There were other considerations, however, which entered into the final determination of the line, particularly the Desplaines River, which covered the entire valley in its zigzag course. To obtain information as to the subsoil, borings were made through the territory, which was known as not being wholly of rock. These borings served as a guide, to a certain extent, in the location of the Channel, and furnished a description of the material found therein.

The first line determined upon ran from Willow Springs to one mile or thereabout this side of Lockport. That distance was divided into fourteen sections, numbered from 1 to 14, inclusive. These fourteen sections were advertised to be let by contract, and when the bids were received, it was very gratifying to find that the prices were within the limits of the estimates of the Chief Engineer and other competent persons.

Shortly thereafter, the contracts were awarded to the lowest responsible bidders, as has been done in the letting all work on the entire line, the prices ranging from 19 to 56 cents per yard for the glacial drift, and from 59 to 95 cents per yard for the solid rock.

The line from Willow Springs to Chicago was determined somewhat later. From Summit to Chicago, the old Illinois and Michigan Canal was selected as the proper line, and there were strong arguments and many points in favor of its selection. It was assumed that under the Sanitary District Act, our Board had a perfect right to take possession of the old Canal anywhere within the limits of Cook County, and to use it for our purpose. After the Board determined this part of the line, we commenced negotiations with the Canal Commissioners, but found our definition of our rights not shared by the Canal Board.

After several futile attempts to reach an agreement, an opinion was asked of and rendered by the Attorney General of the State, wherein he held (and his opinion was agreed in by the Canal Board), that the Board of Commissioners of the Illinois and Michigan Canal would not only have control of the navigation of

the new Channel, but would also control its dockage within the limits of the right of way of the Illinois and Michigan Canal.

This was a very serious question for the Trustees, who, after expending from twenty-five to thirty million dollars, were to be denied the most valuable privileges of owning and controlling the Channel at the very point where the property is of the greatest value, as in any developments of dockage, factory rights, etc., that part nearest the city will first attain value.

A majority of the members of the Board felt that whatever might be done, the Sanitary District, when this Channel is finished, should stand in a position to turn over to its successors and to the people, a Channel unincumbered by the rights of any other corporation, be it State, city or otherwise; that the title should rest solely in the Sanitary District of Chicago.

This position being sound and unsailable, a few members of the Board changed their minds as to this final location. After some deliberation, five Trustees were won over to change from the old Canal to the present line.

My own plan would have been to follow the present line to Corwith, and then curve slightly to the Ogden Ditch, thereby arriving nearer a solution of the bridge problem than by any other route that could have been adopted. For at the Ogden Ditch, Western avenue is bridged at the present time, and the bridges are swing bridges, and the corporations crossing at that point could not have avoided the construction of swing bridges at their own expense.

However, as there was only the necessary majority of five to relocate the line as at present adopted, I was obliged personally to agree with the next best plan, in order to avoid the endless complications that would have followed in taking the old Illinois and Michigan Canal.

After the determination of the line of the Channel and the letting of contracts, the next question that presented itself was the acquiring of the necessary right of way so as to begin practical operations. The necessary land for that purpose not only covered the width of the Channel, but required margin for the immense amount of material to be spoiled on its banks. Aside from these requirements, there had to be secured adjoining this land, sufficient property to control the new bed of the Desplaines River, as the natural bed had to be removed in some places as far away as one

thousand feet or thereabout. The larger part of the property was acquired through settlement; the smaller portion through condemnation proceedings.

The Law Department, under the direction of the Committees on Finance, Engineering and Judiciary, has had charge of securing the right of way, and has done excellent work. Much credit is due that department, as well as the right of way agents, U. W. Weston, during the first two years, and Joseph Donnersberger, from the beginning up to the present.

The employment of labor, particularly since such numbers are employed on this Canal, has given rise to many rumors as to the treatment of the men employed, to the general conditions with reference to wages paid, to the housing and sleeping accommodations, and to the quality of the food furnished.

It may be known to some, that before the first Trustees were elected, a great deal of wild talk was prevalent as to the number of men to be employed, the immense wages to be paid and the powerful influence to be wielded by the political party securing control of this vast machinery; that such influence would be more than a balance wheel in deciding the political complexion of this State.

These wild tales were circulated, and the people of this District received the impression that this Canal would be a most promising field of operation for the purpose of those who desire to draw money and yet perform no work; so that during the first two years, when the prosecution of this enterprise went along without the assistance of that class who never sow but always reap the harvest, wild rumors as to the treatment of the men and their pay were circulated, and naturally found many ready believers; whereas, to the members of this Board and those connected with the District, it was well known that just treatment prevailed, and the pay was better than on any other public or private work.

This Board used every influence in their power to improve the condition of the laborers on the Canal, passed sanitary regulations and had them enforced; demanded wholesome food and as good an hospital service as possible under existing conditions, recognizing the principle that "Labor is Worthy of Its Hire."

It is only within the last six months, by and through the inspection of honest

labor representatives, that a true statement of the real conditions prevailing as to the employment of labor on the Canal was given, and through the able and unbiased report of Joseph Gruenhut, the full facts were submitted to this Board and given to the citizens of Chicago, backed up by figures that stand in contradiction to all the slanders at times so wilfully circulated.

During the months of August, September and October last, there were over 8,700 men at work on this Canal. The lowest wages ever paid were 15 cents per hour, and from that up to 40 cents per hour. Foremen and superintendents ranged all the way from \$60 to \$150 per month. All in all, the labor is being better paid on this work than any work ever carried on in this or any other country on the face of the globe.

It is furthermore gratifying to report that up to the present time no strike among the laborers on the Canal has taken place. It is true that prior to the time that police powers were conferred upon the District by the Legislature, a number of men employed in the quarries adjacent to the Channel, whose pay had been reduced and who had declared a strike, marched along our Channel, stopping the men at work and raising a disturbance in general, but soon as our police force was organized, these outside influences ceased to have effect, and good order has prevailed on the work ever since.

In letting all these contracts, and acquiring this immense amount of right of way, the Board foresaw that the time would come when the revenue in sight would not be sufficient to finish this mighty work. The Sanitary District Act, as originally passed, empowered the District to levy a tax of $\frac{1}{2}$ of one per cent annually on the valuation of the District, which gave us a revenue as follows:

For the first year.....	\$ 957,260 78
For the second year.....	1,023,349 75
For the third year.....	1,167,097 26
For the fourth year.....	1,148,607 21
For the fifth year (estimated, collection not completed).....	1,185,000 00

Making a total of..... \$5,480,315 00

Aside from the above, it empowered the District to issue bonds to the extent of five per cent of the valuation of the property within the District, the total issue, however, at no time to exceed the

sum of \$15,000,000. But as the valuation never reached more than \$254,000,000 and is to-day, strange to say, even \$10,000,000 less, the Board could not issue more than \$12,000,000 in bonds.

Therefore, the total revenue collected from direct taxation and from the bonds of the District, at this time is under \$18,000,000. Whereas, at the closing of the year 1894, after our \$12,000,000 of bonds were all issued and progress on the Channel far enough advanced, a close estimate showed the cost of the Main Channel to be in the neighborhood of \$28,000,000.

The Trustees of this District realized that in order to successfully prosecute this work, the necessary money must be raised by some means or other. To issue more bonds was an utter impossibility, unless the valuation of the Sanitary District could be increased, and even in that event, not more than \$3,000,000 could be raised, unless the Act itself were so amended as to strike out the limitation clause of \$15,000,000.

As Trustees we were well aware that with so many different town organizations within the confines of the Sanitary District, and with Assessors vying with each other to keep down the assessment, the prospects for an increase in our revenue, through an increase in the assessed valuation, were not promising.

To go to the Legislature and ask for an amendment to the Constitution, empowering the District to issue additional bonds, and let future generations pay for part of this enterprise, was doubtful of success, and our prognostications were correct, as the City at the same session of the Legislature tried the same scheme and was defeated.

There was but one practical way open for us to obtain more money to finish the Channel within the few years time, namely, to increase the direct tax for a limited number of years. A committee went to the Legislature, and after several months of labor, the Legislature amended the Sanitary District Act, giving us the power to levy an additional 1 per cent (making a total of $1\frac{1}{2}$) annually for a period of three years.

Assuming that the assessed valuation would be the same as it has been for the last year or two, that would give us during the next three years nearly \$8,000,000 additional, which, with the money already raised by direct taxation and bonds and bonds to be reissued, would bring the total approximately to the amount required to complete the work, \$28,000,000.

One other problem that presented itself as the work progressed on the Main Channel was the settlement of the question of the railroad crossings. The question of bridges, swing or fixed, caused more or less agitation. A majority of the members of the Board, including myself, have always recognized the fact that while the Sanitary District Act was originally passed to relieve Chicago of its sewage, the construction of the work in strict compliance with the law, would build a Channel of sufficient width and more than ordinary depth, which will in time be a navigable Channel in the broadest sense of the word.

In regard to my position, personally, I can find no words to define it more suitably than a quotation from my last annual message of December 4, 1894, as follows:

"The sanitary condition, while not in the least alarming, is such that the necessity for its improvement by letting the water through the Channel at the earliest possible date, even if it be at the expense of every other project, appeals to the good common sense of every person. It is of immediate concern to two millions of people. The commercial advantages lie in the future development of the Illinois Valley in connection with our Channel, and whatever has been done by your Board in the past has not in the least militated against such future development."

While the bridge question seemed a very formidable one, and while the Board was not a unit on the system of bridge construction, a way was found to solve that difficulty that I believe has settled the problem in such a manner as not to militate in the least against swing bridges on the entire line, when the proper time and the exigencies of the occasion may demand it.

The contracts entered into with the railroad corporations, viz: The Pittsburgh, Cincinnati, Chicago and St. Louis Railway Company, the Chicago and Northern Pacific Railroad Company and the Union Stock Yards and Transit Company, at the crossing at Campbell avenue, are of such a nature that the District is permitted within the next two years to construct swing bridges if it so desires, and as the money to do it with is not now in sight, we can erect temporary fixed bridges and substitute swing bridges at any time thereafter.

I believe that the District has entered upon a broad and liberal policy, and any fair-minded person residing in the

Illinois Valley or anywhere in this great State must admit that the Sanitary District has not only fully complied with the law, but has done so broadly.

As this crossing, where these settlements have already been made, was considered the greatest problem, I have every reason to believe that the other crossings, not so formidable in their nature, will be solved on the same basis, with the same favorable stipulations as those heretofore mentioned.

While it may seem that the letting of contracts had closed up the matter, and that the contractors would go ahead and finish their work, that was only the beginning of endless complications that followed.

On the first fourteen original sections, all but two of the original contractors failed to carry out the work at the prices in their contracts, and the ingenuity of these two firms, backed by sufficient capital, enabled them to take advantage of every modern invention. Coupling this with thorough business experience, and without knowing the word fail, they went ahead under the most adverse circumstances and finished their work.

In so doing, they established a certainty and convinced the Trustees that others should also be able to do this work. I want to say that failure on the part of these two firms might have brought results very disastrous to the Sanitary District. The reletting of the entire work would have meant higher prices and consequently more money. As it is, Mason, Hoge & Co., and E. D. Smith & Co. have stood their ground, and I cannot withhold my praise of their perseverance.

The problems that will present themselves to be solved by the Board within the next year, to enable the Main Channel to do its work, will be a proper settlement and definite location of the outlet the other side of Joliet; the widening and deepening of the Chicago River to carry the amount of water required by law, the advertisement for proposals and letting of contracts for the tail race, the location of which was settled some time ago.

These three items and the settlement of such railroad problems as are not already adjusted, will, in the main, almost complete the solution of the great problem of giving Chicago its needed outlet.

Eventually, when the finances of the

District will permit, a channel, conduit or whatever may be determined, must be built from the Lake to the North Branch of the Chicago River, to supply that stream with fresh water, and create a current towards the fork at Lake and South Water streets; then while the Main Channel is in operation, the suction will be sufficient at that point to carry the water towards Bridgeport into the Main Channel. Another cross channel must sooner or later be built from the Lake to or near Bridgeport, to flush that putrid branch of the river there.

However, at the present time, there is no money, in sight to do this collateral work, unless some ways and means are provided within the next few years to further increase the District revenues, for all the money now available will be needed to finish the Main Channel or Trunk Line. I believe it is absolutely necessary to have that work done first and as soon as possible.

The Sanitary District is in a very favorable position to develop and control from ten to twenty thousand horse power, the quantity of which will largely depend on the location and construction of the tail race, beginning at the Regulating Works at Lockport, and extending down to the City of Joliet. From there on toward Lake Joliet still more water power may be developed.

There has been considerable agitation as to the lowering of the lake levels. Some apprehension was had that as soon as our Channel was put to its proper use the effect on the levels of the lakes would show very materially. I am glad to state that these apprehensions and fears are not shared by such men as have given the study of the lake levels more or less attention. Competent engineers who are thoroughly conversant with hydraulic questions believe and assert that the effect of taking 5,000 cubic feet a second through our Channel would be small compared with the 225,000 cubic feet which passes every second through the Detroit river, coming from the three upper lakes, Superior, Huron and Michigan.

At the recent Deep Waterways Conventions at Cleveland and Memphis, the question of the effect the opening of the Chicago Sanitary District Channel on the levels of the great lakes received a great deal of attention, and was discussed by very able men. The conclusions reached were such as not to justify the fear on the part of many that the opening of this Channel would have a very material

effect on the lake levels. These Deep Waterways Conventions should receive due consideration on the part of this Board, and representation should be had at all of them, since fair, true and accurate statements will greatly help the ultimate development of the Channel.

The Sanitary District owns and controls over 11,000,000 cubic yards of stone taken out of the Channel. This stone I believe has a value, which cannot now be accurately determined. At this time when there is demand for good roads, in these days of the motorcycle and the bicycle, the most modern means of locomotion, the building of splendid public highways will be one of the great features in public works. This stone can be of very great use for roads, for filling and otherwise, and thereby the Sanitary District can secure a revenue, the amount of which will largely depend upon good management of this property.

In connection with my report as President of the Board, reports from the Chief Engineer, the Attorney, the Clerk, the Treasurer, the Marshal of Police, the Sanitary Inspector and Labor Statistician, are presented, and will give a full and detailed account of their respective departments and branches.

As the work of the Channel is each month growing less, there will from now naturally be a reduction in the forces employed by the District.

In closing this, my report, as President of the Board, covering a period of four years, I have tried to give, in brief, a general review of such occurrences and incidents as were of great importance during the progress of this gigantic work—a work so near completion that the cleanliness of its history is a source of gratification. No scandals, no jobbery, no political intrigues, no dictations by cliques, mar its record. In retiring from my present position, I feel satisfied that I have endeavored to do my full duty. How far I have succeeded it is not for me to say. I can express a feeling of satisfaction in having been identified with this enterprise from the beginning, and at its head for four years, constantly at work, without a week's vacation, guarding these vast interests as carefully as I did my own.

I willingly retire, with the firm belief that I have done my full duty, at the same time heartily thanking my associates for their confidence in me, for the honor shown me, and for their hearty co-operation with all my efforts. My record

in the past will be an index and a measure of what I will do in the future.

Respectfully submitted,

(Signed) FRANK WENTER,
President."

(Accompanied by six (6) reports (including tables), those of Clerk and Treasurer being inventories only.)

(*Chief Engineer.*)

"CHICAGO, Nov. 29, 1895.

Hon. Frank Wenter, President Board of Trustees, Sanitary District of Chicago:

DEAR SIR—Pursuant to your request for a report showing the condition of the work of this District on December 1st, I have the honor of submitting the following statement: Since my report covering the work of the year 1894 a rate of progress has been attained which surpasses any previous record made upon this Channel. The value of the regular and collateral work done in the period between January 1st and December 1st, eleven months, is \$6,036,400. The volume of work done in this period is as follows:

Cubic Yards.

Glacial drift.....	7,187,600
Solid rock..	4,824,000
Retaining wall... ..	95,000

The total volume of work accomplished since its inception is as follows:

Cubic Yards.

Glacial drift.....	20,172,686
Solid rock... ..	10,222,751
Retaining wall.....	97,600

The total value of the work done to

December 1st, on regular and collateral contracts, is \$14,456,600, or 76.20 per cent of the entire work done upon a basis of existing contracts. The percentage of work done January 1st was 44.38, so the percentage done in the first eleven months of 1895 amounts to 31.52, or within 12.56 per cent of the total work done in 1892, 1893 and 1894.

In making up these statements it has been necessary to approximate the estimate for the last half of November, as the returns of the Assistant Engineers were not available for that period.

Sections 9 and 10, so far as excavation is concerned, are completed.

Eleven, 12 and 13 are practically done and their stage of progress is indicated by the percentages 99.1, 98.1 and 93.9, respectively.

The percentage of completed work on I, K, L and M respectively, is as follows: 99.2, 94.9, 99.0 and 98.3. No one section can be regarded as technically completed until the expiration of the time named in the contract for its execution.

I submit the following tables showing the details of the information summarized above. No. 1, an exhibit of the work accomplished in yards on each sub-division of the work for the years 1892, 1893, 1894 and 1895; and No. 2 the money value of the same for the periods indicated.

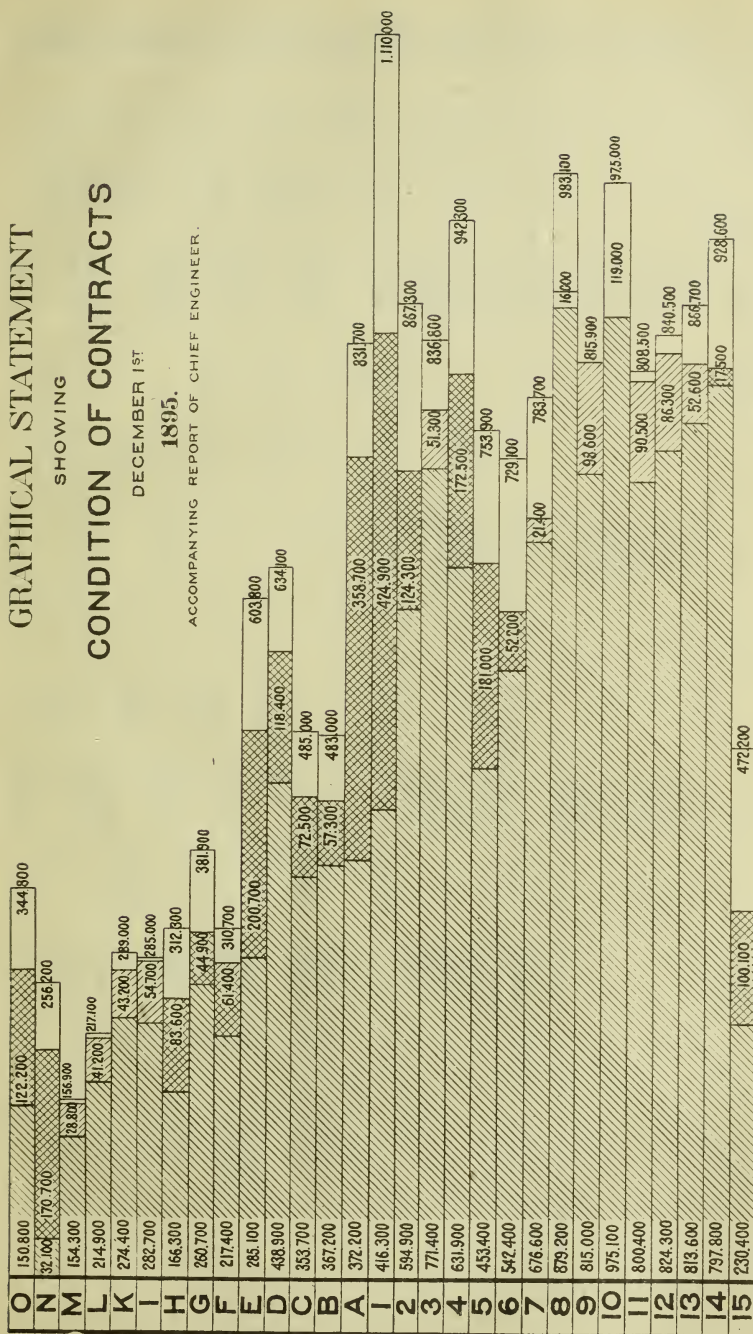
Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

(Three tables accompanying.)

GRAPHICAL STATEMENT SHOWING CONDITION OF CONTRACTS DECEMBER 1ST 1895.

ACCOMPANYING REPORT OF CHIEF ENGINEER.



SANITARY DISTRICT OF CHICAGO—ENGINEERING DEPARTMENT

STATEMENT OF MATERIAL (CUBIC YARDS) EXCAVATED BY CONTRACTORS FROM THE BEGINNING OF WORK TO NOVEMBER 15, 1895.

SECTION	1892			1893			1894			1895			TOTALS.			PRICE
	Glacial Drift	Solid Rock		Glacial Drift	Solid Rock		Glacial Drift	Solid Rock		Glacial Drift	Solid Rock		Glacial Drift	Solid Rock	Retain'g Wall	
O.				518,821			80,739			599,590			599,590			\$0.21
O.				7,600			58,570			97,100			97,100			.199
N.				71,300			352,130			130,070			130,070			.23
M.				343,800			632,850			695,630			695,630			.217
L.				458,100			663,300			1,090,950			1,090,950			.197
K.				414,600			680,400			1,077,900			1,077,900			.25
J.				1,111,444			404,272			1,130,700			1,130,700			.25
I.				527,306			385,064			515,716			515,716			.20
G.				366,914			185,000			912,970			912,970			.28
F.				564,881			404,284			662,527			662,527			.2975
E.				227,317			517,558			185,000			185,000			.296
E.				290,652			664,872			564,881			564,881			.275
D.				664,626			531,088			453,500			453,500			.27
C.				190,154			211,170			1,635,400			1,635,400			.26 7 16
B.				101,719			398,200			1,379,400			1,379,400			.235
A.				11,926			11,926			1,340,191			1,340,191			.27
1.				3,917,000			3,917,000			1,191,278			1,191,278			.3095
1.				*158,617			115,416			115,416			115,416			.27
1.				24,700			679,225			11,926			11,926			.3058
2.				63,400			132,373			690,900			690,900			.429
2.				*80,717			86,900			158,617			158,617			.8653
2.				32,242			1,615			86,900			86,900			.80
3.				36,400			2,001			1,615			1,615			2.90
3.				21,200			483,452			50,101			50,101			.28
3.				31,910			32,242			679,225			679,225			.50
3.				21,200			256,778			89,717			89,717			.6131
4.				12,700			300,352			257,358			257,358			.80
4.				87,200			40,632			1,300			1,300			3.50
4.				*106,808			12,000			73,310			73,310			.27
4.				185,800			386,352			388,000			388,000			.56
5.				31,500			4,393			676,300			676,300			.76
5.				87,200			537,086			12,000			12,000			3.25
5.				*12,256			6,491			48,593			48,593			.27
5.				23,600			317,700			1,010,807			1,010,807			.49
6.				15,100			273,000			106,808			106,808			.502
6.				24,100			1,300			133,700			133,700			.80
6.							1,300			17,857			17,857			1.472
6.							1,300			249,300			249,300			.27
6.							1,300			590,700			590,700			.31
6.							1,300			12,256			12,256			.5096
6.							1,300			153,800			153,800			.735
6.							1,300			25,600			25,600			3.25
6.							1,300			24,100			24,100			.22

6.	18,200	229,800	381,500	43,100	1,300	127,000	272,800	27,200	756,500	315,900	28,500	27	
6.	.....	.....	.....	.....	1,300	.....	.....	27,200	.....	.....	.....	735
6.	29,800	134,700	102,100	297,000	.....	2,800	385,500	5,600	269,400	790,700	5,600	3,25
7.	.....	500	107,700	.....	.....	.....	.....	.....	.....	.....	.....	26
7.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	735
7.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,25
8.	54,800	5,000	37,800	546,800	.....	.....	399,900	2,700	98,300	1,118,800	2,700	26
8.	.....	159,200	.....	.....	.....	.....	.....	.....	.....	.....	.....	7475
8.	46,400	42,000	21,000	487,800	.....	8,032	435,694	.....	117,432	1,020,094	.....	3,25
9.	.....	2,640	3,300	630,800	.....	5,456	294,707	.....	62,056	.....	.....	769
10.	46,200	7,100	3,300	630,800	.....	5,456	294,707	.....	62,056	1,199,407	.....	25
10.	30,350	253,550	3,732	.....	.....	.....	.....	.....	49,788	.....	.....	80
11.	34,100	11,056	3,732	.....	.....	.....	.....	.....	6,893	.....	.....	3025
11.	.....	*6,893	251,483	386,100	.....	.....	334,050	.....	.....	980,833	.....	7055
11.	.....	.....	*4,419	.....	.....	.....	.....	.....	4,419	.....	.....	7925
11.	9,200	.....	11,739	344,800	.....	15,131	358,900	.....	54,270	.....	.....	2,003
12.	15,553	11,847	11,739	344,800	.....	.....	.....	.....	.....	981,460	.....	3025
12.	.....	255,600	.....	.....	.....	.....	.....	.....	.....	.....	.....	7925
12.	.....	*7,475	.....	.....	.....	.....	.....	.....	.....	7,475	.....	3025
12.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7925
12.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,196
12.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,66
12.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8,352
13.	32,822	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26
13.	.....	327,300	.....	515,700	.....	.....	152,500	.....	32,822	1,026,200	.....	7475
13.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,50
13.	30,700	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20
13.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36
13.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	73
13.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19
14.	15,000	28,066	88,534	.....	.....	15,000	.....	10,560	.....	.....	.....	59
14.	.....	.....	212,100	176,485	.....	.....	638,600	.....	212,100	.....	.....	36
14.	.....	.....	29,500	.....	.....	2,100	.....	.....	31,600	.....	.....	73
14.	30,800	.....	.....	9,700	.....	.....	355,900	.....	.....	365,000	.....	19
15.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	59
15.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	59
Totals.	409,475	119,130	3,230,728	1,577,109	9,313,289	3,692,480	2,600	6,916,133	4,734,186	95,004,44	19,899,225	10,123,905	97,001,44

* These quantities were excavated by Force Account in the Fall of 1893.

SANITARY DISTRICT OF CHICAGO—ENGINEERING DEPARTMENT.

STATEMENT OF EARNINGS BY CONTRACTORS FROM THE BEGINNING OF WORK UNTIL NOVEMBER 15, 1895.

SECTION.	1892		1893		1894		1895		TOTALS.		Grand Total.
	Regular.	Collateral.	Regular.	Collateral.	Regular.	Collateral.	Regular.	Collateral.	Regular.	Collateral.	
O.	\$ 110,464 81	.....	\$ 34,771 99	\$ 506 80	\$ 145,236 80	\$ 506 80	\$ 145,743 60
N.	16,390 00	.....	13,517 10	.....	29,916 10	.....	29,916 10
M.	74,604 60	.....	76,412 21	.....	151,016 81	.....	151,016 81
L.	90,245 70	.....	124,071 45	.....	214,917 15	.....	214,917 15
K.	108,650 00	.....	165,825 00	.....	269,475 00	.....	269,475 00
J.	170,100 00	.....	112,575 00	.....	282,675 00	.....	282,675 00
I.	41,018 76	.....	117,538 88	.....	158,237 64	.....	158,237 64
H.	147,813 68	.....	107,817 32	.....	353,631 00	.....	353,631 00
G.	70,208 09	\$ 17,782 52	54,575 00	.....	211,923 16	38,047 15	249,970 31
F.	13,289 13	7,094 67	109,155 87	.....	377,787 28	7,884 68	385,671 96
E.	235,440 48	2,880 54	136,821 47	.....	435,358 88	2,880 54	438,239 42
D.	156,244 92	1,360 71	123,110 86	.....	347,659 00	1,360 71	349,019 71
C.	103,208 79	879 07	143,393 76	.....	361,851 57	2,080 12	363,931 69
B.	241,923 41	69,247 56	64,670 81	218 00	364,828 88	82,927 00	447,755 88
A.	142,301 16	5,274 68	245,031 30	8,403 76	408,275 26	179,171 75	588,447 01
1.	136,779 83	3,850 39	276,622 90	33,020 20	592,415 98	55,005 68	647,421 66
2.	298,105 18	.....	434,668 80	.....	762,397 70	.....	762,397 70
3.	296,063 20	.....	307,162 49	.....	631,375 54	79,910 23	711,285 77
4.	269,551 05	.....	209,774 50	.....	450,806 00	11,097 71	461,903 71
5.	124,718 50	4,851 17	323,198 00	.....	534,368 50	16,517 00	550,885 50
6.	144,210 50	9,896 00	302,465 50	6,335 00	669,603 50	14,137 00	683,740 50
7.	241,841 00	11,179 62	307,700 25	3,053 95	870,610 00	48,007 36	918,617 36
8.	418,561 00	4,012 30	337,137 01	.....	814,984 01	4,012 30	818,996 31
9.	380,578 20	15,077 79	237,177 60	632 44	773,087 60	48,266 01	821,353 61
10.	505,465 00	4,759 04	264,734 63	.....	922,371 62	32,020 92	954,392 54
11.	307,113 18	4,759 04	318,913 88	1,223 62	822,484 67	17,718 37	840,203 04
12.	276,805 05	1,861 63	130,953 75	.....	812,578 22	.....	812,578 22
13.	385,485 75	.....	469,178 00	.....	751,788 00	.....	751,788 00
14.	322,904 15	.....	210,026 00	.....	221,351 00	.....	221,351 00
15.	11,328 00	.....	.....	1,000 00	.....	.....	15,052 85
Below 15.	17,052 85	.....	.....	.....	18,052 85	.....
Totals.....	\$ 199,911 81	\$ 418,391 15	\$ 5,627,120 86	\$ 182,517 26	\$ 5,888,701 92	\$ 58,695 77	\$ 13,052,127 47	\$ 659,604 18	\$ 14,311,731 65		

(Treasurer.)

"CHICAGO, November 30, 1895.

Hon. Frank Wenter, President:

DEAR SIR—In accordance with your request of November 23, I herewith submit a statement of the finances from January 1st to November 30, 1895, inclusive.

RECEIPTS.

Cash on hand January 1st, 1895.....		\$1,318,520 19
Sale of Bonds, 4th issue, principal.....	\$4,000,000 00	
Sale of Bonds, 4th issue, premium.....	20,000 00	
Sale of Bonds, 4th issue, accrued interest.....	2,095 89	
Sanitary District Tax Account.....	1,108,198 73	
Interest Account (bank balances).....	*46,435 19	
General Account.....	1,844 50	
Engineering Department.....	215 00	
Land Account.....	175 00	
Total amount received.....		\$5,178,964 31
		\$6,497,484 50

DISBURSEMENTS.

Clerical Department.....	\$ 10,046 36	
Treasury Department.....	1,873 59	
Engineering Department.....	159,710 16	
Engineering Department (Construction Account).....	4,390,395 69	
Law Department.....	37,802 81	
Law Department (Land Account).....	112,187 47	
General Account.....	52,823 58	
Police Department.....	42,732 71	
Bond Account—		
First issue.....	\$100,000 00	
Third issue.....	150,000 00	
		250,000 00
Bond Interest Account—		
First issue.....	\$ 90,000 00	
Second issue.....	71,250 00	
Third issue.....	75,000 00	
Fourth issue.....	75,000 00	
		311,250 00
		\$5,368,832 37
Cash on hand November 30, 1895.....		\$1,128,662 13
Of this amount.....		855,000 00
Is the balance of the appropriation of \$1,000,000.00 made by ordinance of October 9, 1895, for the payment of District bonds and interest, leaving the net available cash balance this date.....		\$ 273,662 13

* November estimated.

Yours truly,

(Signed)

MELVILLE E. STONE,
Treasurer.By A. B. CLEGHORN,
Asst. Treas."

November 30, 1895.

(*Marshal.*)

“CHICAGO, November 25, 1895.

*Honorable Frank Wenter, President of
the Board of Trustees of the Sanitary
District of Chicago:*

DEAR SIR—It becomes my duty to present to you at this time a report of the administration and action of the Police Department of the Sanitary District for the past ten months, as well as present condition of the same. While no riots, strikes or violent disturbances have occurred along the line of work of the Sanitary District during the present year, existing conditions have made it a season of unusual activity and importance for the Department. The criminal and vicious element, referred to in my last Annual Report, have through the spring and summer months resorted here in much larger numbers than heretofore, menacing the resident honest laborers and the large property interests along and adjacent to the line of work to such an extent that unusual vigilance on the part of the Police Department has been necessary for their proper safety and protection. It is a matter of congratulation, as well as somewhat surprising that in a territory so difficult of protection as the Police District is, with the saloons located in out of the way places and in such numbers as they are, and with such opportunities for hiding and escape of criminals, that so few serious offenses have been committed, so little property stolen or destroyed and so few criminals should have evaded arrest and punishment.

During the ten months ending October 31st, 1895, 750 arrests have been made. Fourteen of these were on charges of murder, 24 on charges of robbery and 31 on charges of larceny—the balance for miscellaneous offenses, covering nearly every crime in the code. Two persons charged with murder have evaded arrest, but in both instances a report of the commission of the crime did not reach the Department until many hours after its commission. Fully 80 per cent. of all valuables stolen have been recovered and returned to their rightful owners. No attempts at wanton destruction or arson of any railroad or contractors' property has succeeded, a fact which I believe to be due to the speedy and almost certain apprehension, arrest and punishment of all classes of criminals. No gambling or public violation of morals has

existed in the District where our Department had jurisdiction. We have maintained harmonious relations with the authorities of the several villages, have co-operated with them and aided them in every way possible; no conflict of authority has occurred and the harmonious relations still exist. We have protected railroad property and travel, as I believe, to the perfect satisfaction of railroad officers, employes, shippers and the traveling public. During the summer and early fall large numbers of excursionists and citizens generally have visited the work, in connection with which the police force has done everything possible for their safety, protection, guidance and information. Police officers have been detailed on all excursion trains, and every possible precaution taken for the welfare of the excursions. A complete record has been kept of all injuries and casualties and every possible assistance rendered to the sick and injured and care given to the dead. In this connection I will say that there has been taken by the police officers forty-four sick and injured persons to the various hospitals, while fifteen sick and injured were otherwise cared for. Six insane persons have been cared for and taken to the hospital. Forty-two dead bodies have been cared for. This last includes bodies taken from the river and old canal, persons killed by railroads, persons who met death by sunstroke or violence and by accident on the work. But few changes have been made in the personnel of the force. No deaths have occurred, although during the past summer some of the officers were quite seriously sick. For the most part the force has at present organized, faithful, honest, brave and capable men. While much of the work is nearing completion, yet the extension of the work to Lockport, and the consequent influx of people, has been the assignment of men to that point a necessity. Moreover, the great activity on the sections from H to I inclusive calls for more men in that district, while the abandonment of work and discharge of employees on some of the sections having left much property unprotected, and a large number of discharged employes made desperate by their enforced idleness and poverty, would seem to make it necessary to maintain police force at its present numbers for some time at least.

Herewith please find an inventory of personal property in use by the department.

(Signed) EDWARD WILLIAMS,
Marshal."

(Labor Statistician.)

"CHICAGO, November 30, 1895.

Hon. Frank Wenter, President of the Board of Trustees of the Sanitary District of Chicago:

DEAR SIR—When work commenced on the Channel the general stagnation in business had caused a fall in wages in all industries, with large decrease in the number of men employed, and the contractors by concerted action could have fixed the rate for common labor at 10 to 12½ cents per hour; but the Board of Trustees upheld the minimum rate of 15 cents per hour for common labor, which is higher than is paid in Chicago, and thereby also influenced the wages paid in stone quarries at Lemont and other places, acting as a regulator where a trade union of laborers could not be organized to maintain the rights of labor as to fair wages.

Trade unions are impracticable along thirty miles of the Channel in an almost uninhabited stretch of territory along the Illinois and Michigan Canal and the tracks of two Trunk Railroads. There has been from the beginning absolute free trade in labor on this public work, and the contractors on the whole have not reduced wages by attempting to import low priced working people, and the few hundred colored teamsters and laborers earn the same wages as the white laborers. This is a great achievement in the necessary amalgamation of the working forces in a mixed population, by raising all laborers to the high American standard of earning a living.

Powerful machinery for digging and hoisting, steam shovels, excavators, inclines, conveyors, derricks, cantilevers, cableways, channellers, steam drills, pumps, etc., multiplied the effective productiveness of human labor, so that the contractors are encouraged to pay fair wages to their laborers, mechanics and artisans, and yet earn reasonable profits on capital.

The average wages on the Drainage Channel are as follows: Daily wages—

Laborers, \$1.50 to \$1.75; teamsters, \$1.50 to \$1.60; drillers, \$1.75 to \$2.00; trainmen, \$1.75 to \$2.00; firemen, \$1.75; channellers, \$2.50 to \$3.00; first leverman, \$2.20; second leverman, \$1.50; first hookers, \$1.75; second hookers, \$1.50; riggers, \$2.25; cableway repairers, \$2.25; machinists, \$2.00 to \$2.50; carpenters, \$2.00 to \$2.25; blacksmiths, \$2.50 to \$3.00; boilermakers, \$3.50; stone masons, \$2.50 to \$3.00.

Monthly wages—Superintendents, \$100 to \$150; timekeepers, \$60 to \$100; bookkeepers and clerks, \$60 to \$125; foremen, \$60 to \$80; engineers and pumpmen, \$50 to \$80; electricians, \$75 to \$90; civil engineers, \$90 to \$100; steam shovel engineers, \$125; cranimen, \$90 to \$100.

For summer months the following working force was employed (more or less) on the Channel by the contractors on all sections: Forty-five superintendents, 32 bookkeepers and clerks, 280 foremen and timekeepers, 3 civil engineers, 73 steam shovel engineers, 73 cranimen, 12 first levermen, 8 second levermen, 12 first hookers, 12 second hookers, 9 riggers, 7 cableway repairers, 240 engineers and pumpmen, 275 firemen, 50 trainmen, 210 drillers, 113 channellers, 11 electricians, 39 machinists, 100 stonemasons, 101 carpenters and 11 helpers, 69 blacksmiths and 46 helpers, 12 boilermakers and 7 helpers, 50 watermen and boys, 500 teamsters, 6,000 laborers—a total of 8,500, to which may be added 350 men and women employed in the boarding houses.

Those working by the day received the following: 6,124 men at \$1.50, 10 at \$1.60, 30 at \$1.65, 603 at \$1.75, 354 at \$2.00, 43 at \$2.25, 100 at \$2.50, 86 at \$2.75, 286 at \$3.00, 12 at \$3.25, 45 at \$3.50, 30 at \$4.00, 4 at \$4.50, and 50 boys at 75 cents.

Those paid by the month received at the following monthly rates: Forty men at \$50, 10 at \$55, 76 at \$60, 8 at \$65, 7 at \$70, 95 at \$75, 11 at \$80, 11 at \$85, 70 at \$90, 2 at \$95, 40 at \$100, 1 at \$110, 3 at \$115, 80 at \$125, 1 at \$130, 1 at \$140, 3 at \$150.

Machinery does the hardest work of digging and shoveling, and horse power is used in removing the top soil, more than 1,000 horses and mules being thus employed. The work done by hand in the rock sections is hard on men who are not used to it. The rock is blasted, then broken, so that it can be thrown into iron buckets

or loaded on trucks for removal. It requires strength, endurance and some skill to handle the shattered rock of all sizes so as to avoid being hurt or hurting somebody else through carelessness or lack of skill in removing the stuff. The work lasts ten hours during the day and night, but it is not as continued and hurried as building operations in Chicago are conducted.

The contractors furnish boarding and lodging for many thousand men, thereby securing a working force which otherwise could not be kept up. The greatest part of the Drainage Channel is too far distant from settlements which could afford sufficient living accommodations, so that all sections were supplied by the contractors with numerous frame buildings for the workingmen. They are scattered in great numbers along the Illinois and Michigan Canal, the railroad track and the Drainage Channel, and there are a sufficient number of wells for a continuous water supply.

Board in the camps is from \$3.50 to \$4.00 per week. Over two-thirds of all employed men, mostly single men, board in the camps, so as not to waste time in walking great distances. The married men live with their families in huts, cabins, tents and cottages along the Channel, paying a mere nominal rent to the contractors who erected these frame houses for their working forces and collect about \$5.00 a month rent from a family cottage and 50 cents to \$1.00 a month from each occupant of a dwelling used by men who board together, in company so called, chiefly living on canned goods and buying vegetables, milk, bread, fresh meats, etc., from the peddler wagons which run into all settlements. Rent is but a small proportion of the cost of living on the line of the Drainage Channel. The landlords in Lemont, Lockport, Willow Springs and other villages have raised rents of dwellings and stores, and especially saloons, which have increased in number all along the line.

About 2,000 men employed on the Drainage Channel live in these towns and villages, and help to increase profitable trade in common necessities of life, like food, drink, clothing and furnishing goods, shelter and various comforts of civilization. On most sections are commissary stores for the accommodation of the workmen, where they can get groceries, tobacco, clothing, boots and shoes and whatever

else they wear. These are not truck stores in the bad sense of certain mining districts; the workmen need not buy there in order to keep their jobs, and they are not charged more than in other country stores and can buy on credit for themselves and families.

The contractors as a rule pay twice a month, and men who are discharged get paid immediately on most of the sections. There has been no strike on any section of the Channel.

Respectfully submitted,

(Signed) JOSEPH GREENHUT,
Labor Statistician."

VOUCHERS.

The Clerk presented the following vouchers:

PAY ROLLS.

Eng. Dept., Chief Engineer's roll (Nov., 1895).....	\$1,441 67	
Eng. Dept., Division of Construction (Nov., 1895).....	5,086 80	
Eng. Dept., Division of Drafting and Designing (Nov., 1895).....	2,785 80	
Eng. Dept., Division of Records (Nov., 1895).....	863 00	
Eng. Dept., Special Service roll (Nov., 1895).....	3,698 91	
Eng. Dept., Discharged Men's roll (Nov., 1895).....	926 97	
	<hr/>	\$14,803 15
Clerical Dept., Clerk's roll (Nov., 1895).....		891 67
Law Dept., Attorney's roll (Nov., 1895).....	\$ 1,288 34	
Law Dept., Joliet roll, (Nov., 1895).....	458 33	
	<hr/>	\$1,746 67
Treasury Dept., Treasurer's roll (Nov., '95).....		166 67
General Account, General roll (Nov., '95).....	\$ 250 00	
General Account, Towpath roll (Nov., '95).....	170 25	
General Account, Trustees' roll (Nov., '95).....	2,488 91	
	<hr/>	\$2,909 16
Police Dept., Marshal's roll (Nov., 1895).....		4,063 32
	<hr/>	\$24,580 64
Total.....		

LAW DEPARTMENT.

Jos. Donnersberger,

(Expert—Right of way services, Nov., 1895).....	\$ 300 00
Geo. E. Dawson, (expense).....	40 75
	<hr/> \$ 340 75

TREASURY DEPARTMENT.

H. J. Armstrong & Co. (tax warrant book)...	\$ 6 25
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GENERAL ACCOUNT.

J. S. Dunham, Treasurer, (copies Proceedings Cleveland Deep Waterways Convention).....	\$ 300 00
C. F. W. Junge. (postage stamps).....	25 00
	<hr/> \$ 325 00

POLICE DEPARTMENT.

J. H. Tedens & Co. (sundries).....	\$ 55 06
Grand total.....	<hr/> \$25,307 70 <hr/>

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the vouchers, as read and shown above, be approved and ordered paid.

On roll call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, approved and paid.

REPORT ON CLAIMS FOR EXTRA WORK ON
LEVEE ON SECTION 8, AND IN SAVING
OF DIMENSION STONE
ON SECTION 7.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by communication from Mason, Hoge & Co., enclosing two bills (\$1,138.82 and \$490 20), being claims for extra work on levee on Section 11, and in the saving of dimension stone on Section 7, presented and referred to that Committee at the meeting held November 20, 1895, (page 2942 of the Proceedings), recommending the allowance of said claims in the amounts of \$1,138.82 and \$400.00 re-

spectively, as provided in the report; and the report was read.

Mr. Cooley, seconded by Mr. Boldenweck, moved that the report be adopted, ordered printed and placed on file, and the recommendations made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—eight (8). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and, with enclosures, placed on file, and the recommendations made in the report concurred in.

The following is

THE REPORT:

“CHICAGO, Dec. 2, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—We have considered the matter of the bills of Mason, Hoge & Co., for work done on the levee on Section eleven (11) during the months of October, November and December, 1894, and for placing wooden blocks under dimension stone saved by them for the District on Section seven (7), the same having been referred to us by your Honorable Body at its meeting of November 20, 1895, (Proceedings, page 2942).

We find that the work done on said levee properly comes under the head of “Extra Work,” and that the amount of the claim therefor should be paid.

In regard to the bill for wooden blocks used in piling dimension stone, we do not approve of the item therein for cutting and placing the lumber, as such work would not exceed that necessary in selecting and placing spawls, the method first adopted under the contract for saving such stone.

Information has also come to the Committee that a portion of said lumber was not used in connection with piling said dimension stone, but was consumed for firewood. We therefore recommend that the bill rendered be cut down by the exclusion of these items and that same be allowed for the sum of four hundred (\$400.00) dollars.

We return herewith for filing the communication of Messrs Mason, Hoge & Co.,

and also that of the Chief Engineer to the Committee.

Respectfully submitted,

(Signed) L. E. COOLEY,
Chairman.

B. A. ECKHART,
W. H. RUSSELL,
WM. BOLDENWECK,
J. J. ALTPETER,
THOMAS KELLY,

Joint Committee on Engineering and Finance."

(Accompanied by report, communication and two (2) bills).

REPORT ON EXTENSION OF TIME AND
WITHDRAWAL OF CERTAIN NOTICE
ON CONTRACT FOR
SECTION H.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by agreement, in duplicate, with Gahan & Byrne, contractors for Section H, providing for extension of time and withdrawal of certain notice on the contract of said section, as provided in the report and accompanying agreement, and recommending that the President and Clerk be authorized and directed to execute said agreement, on behalf of the District, as provided in the report; and the report was read.

Mr. Cooley, seconded by Mr. Boldenweck moved that the report be adopted, and, with accompanying agreement, ordered printed and placed on file, the recommendations made in the report concurred in, and the President and Clerk authorized and directed to execute said agreement, on behalf of the District, as provided in the report.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—seven (7). Excused and not voting—Mr. Altpeter—one (1). Nays—None.

Upon which result the President declared the motion carried, the report adopted, and, with accompanying agreement, ordered printed and placed on file, the recommendations made in the report concurred in, and the President and Clerk authorized and directed to execute said agreement, on behalf of the District, as provided in the report.

The following is

THE REPORT, WITH ACCOMPANYING AGREEMENT:

"CHICAGO, Dec. 2, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago;

GENTLEMEN: In addition to the sections reported upon at the last meeting of your Honorable Body, your Committee have reached an agreement with the contractors of Section H for an extension of the time of completion of the work on said section to November 30th, 1896.

We transmit herewith a form of agreement, in duplicate, and recommend that same be executed by the President and Clerk, on the part of the District, so soon as same shall have been executed by the contractors and the consent of the sureties obtained thereto.

Respectfully submitted,

(Signed) L. E. COOLEY,
Chairman

B. A. ECKHART,
W. H. RUSSELL,
THOMAS KELLY,
WM. BOLDENWECK,

Joint Committee on Engineering and Finance."

(Accompanied by agreement, in duplicate.)

(AGREEMENT.)

"*This Agreement, Made this 25th day of November, A. D. 1895, by and between the Sanitary District of Chicago, party of the first part, and Thomas Gahan and Thomas Byrne doing business under the firm name and style of Gahan & Byrne, party of the second part, witnesseth, that*

WHEREAS, Said parties have heretofore entered into an agreement, bearing date the 27th day of December, A. D. 1893, for the complete excavation and entire removal of earth, rock, glacial drift and other material from that portion of the Main Drainage Channel of first party, known and distinguished as Section H, together with the building of all collateral works which by the terms of said contract are included in same, and the time fixed in said contract for the completion of the work called for thereunder, with such extension

as is provided therein, will expire May 31st, 1896; and

WHEREAS, Second party, by a written communication, bearing date the 18th day of November, A. D. 1895, have requested that the time for the completion of the work on said Section H be extended;

Now, therefore, In consideration of the mutual and respective undertakings heretofore, it is hereby agreed and covenanted by and between the parties hereto that the time for the completion of the work specified in said original contract, together within any modifications thereof subsequently agreed upon, be and the same is hereby extended to the 30th day of November, A. D. 1896.

In consideration of said extension of time, second party hereby withdraws the notice sent by them January 30th, 1895, to the Board of Trustees of first party, requesting immediate possession of the entire right of way free and clear of any obstructions, and particularly free and clear from the obstruction of the tracks and right of way of the Chicago, Santa Fe and California Railway Company.

In witness, whereof, On the day and year first above written, the said Sanitary District of Chicago has caused this agreement to be signed by its President and attested by its Clerk, and its corporate seal to be hereto affixed, and the said party of the second part have hereunto set their hands and seals.

SANITARY DISTRICT OF CHICAGO,

By.....

President.

Attest:

.....

Clerk.

.....[SEAL]

.....[SEAL]

The undersigned surety upon the bond given by Gahan & Byrne, party of the second part in the above agreement for the faithful performance by them of the terms and conditions of the original contract, between said parties, for the work on said Section H, hereby consents to the extension of time hereinabove provided for the completion of said original contract, and expressly agrees that said extension shall in nowise alter or affect its liability as surety upon the bond of said contractor."

REPORT ON COMMUNICATION ON MOMENCE DAM.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by communication from W. J. Brown, concerning the Momence dam and the removal of rock in the Kankakee River, presented and referred to that Committee at the meeting held September 13, 1893 (page 1456 of the proceedings), transmitting reports from the Chief Engineer and extract from report of the State Board of Health, and recommending that the same be printed and placed on file; and the report was read.

Mr. Cooley, seconded by Mr. Boldenweck, moved that the report be adopted; with transmitted reports, ordered printed and placed on file, and the recommendations made in the report of the Committee concurred in.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT, WITH ENCLOSURES:

"CHICAGO, Dec. 2, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—At the meeting held September 13, 1893 (page 1456 of the Proceedings), your Honorable Board referred to this Committee a communication from William J. Brown of Momence, Ill., in regard to the cutting away of the rock ledge of the Kankakee River at that point for the purpose of assisting in the drainage of the marshes above, in Illinois and Indiana. With a view of ascertaining what had been done and what was proposed further in the premises, the Chief Engineer sent Assistant Engineer E. J. Ward to Momence, and the material facts were reported under date of March 22, 26 and May 8, 1894. Meantime, the Committee had been advised that the Indiana Drainage Law had been declared unconstitutional, and that no further action was imminent, and so this report was deferred for the purpose of appending thereto a report made by the Chief Engineer upon this subject in 1890. This report has not been found.

It appears that the proposed action of the Indiana authorities was a matter of solicitude in 1890, and that the Chief Engineer of the District prepared an ex-

haustive review of the subject matter for the use of the Attorney, and that the Attorney called the attention of the Attorney General of the State to the question. (See letters of Geo. W. Smith to Attorney General Hunt, dated September 17 and November 11, 1890, pages 45 and 81 of the Proceedings.) The action taken seems to have deterred the Indiana authorities for the time being.

The conclusion accepted at that time was that the effect of draining the marshes as proposed would be to increase floods in the Illinois River and to carry in large quantities of sand which would be injurious to navigation and ultimately fill the bed of the lower Illinois.

Your Committee returns all the papers in this case, and recommends that they be printed and filed for reference. We also submit an extract from a report of the State Board of Health, published in 1889, in reference to "The Kankakee Watershed," under the title of "Water Supplies of Illinois," and recommend that the same be printed; the missing report should also be printed when found.

We believe that it is expedient in every way to keep this question under advisement with a view to action should Indiana attempt further work in Illinois.

Respectfully submitted,

(Signed)

L. E. COOLEY,
Chairman.

B. A. ECKHART,

JOHN J. ALTPETER,

WM. BOLDENWECK,

W. H. RUSSELL,

THOMAS KELLY,

Joint Committee on Engineering and Finance."

(Communication and five (5) other enclosures.)

(ENCLOSURES)

"CHICAGO, March 22, 1894.

To the Committee on Engineering and Finance:

GENTLEMEN—In the matter of the removal of the rock ledge in the Kankakee River at Momence, Illinois, concerning which you asked for information, I submit a report made to me by Mr. E. J. Ward, Assistant Engineer, giving the results of

investigations made by him. From this report it appears that the work already done in removing this dam does not create a very harmful condition, but the work which it is proposed to do will probably result in damage to interests along the Kankakee, west of Momence. It would seem proper that some one should represent this District at the meeting set for May 3d, to the end that we may have early information as to the plans there formulated.

Respectfully submitted,

(Signed)

ISHAM RANDOLPH,
Chief Engineer."

"CHICAGO, March 21, 1894.

Isham Randolph, Esq., Chief Engineer:

DEAR SIR—Complying with your instructions I visited Momence, Ills., on the 19th inst. and returned yesterday, the object of the trip being to ascertain the present condition of the limestone ledge in the bed of the Kankakee River at that place and what steps, if any, have been taken to cut the ledge still deeper.

During my stay in Momence I talked with several gentlemen, who I believe are well posted on the subject, and walked along the river banks from the upper to the lower end of excavation made last fall.

The contractors for the work done last fall were Moran & Co. of St. Paul, Minn. I understand that about 90,000 cubic yards of the ledge were removed, and that the contractors received from the Commissioners of Indiana \$65,000 for the work.

Referring to the tracing accompanying this report, there used to be a dam across the South Branch of the river at "I" and one across the North Branch at "K." The elevation of the crest of the former was nine (9) inches higher than the latter, thus turning the bulk of the water into the north channel. I understand that these dams were originally erected under the old "Mill and Millers" act, and have since been maintained, and were even rebuilt for ice purposes, although the grist mill originally erected on the north channel was destroyed many years ago. The contractors removed both of these dams.

The original summit of the rock ridge is at the point "A." More or less rock was taken from the bed of the river by the contractor from a point "B," about 1,600 feet

above the crest to the point "C," just above the lower railroad bridge. I understand that the cut at the summit cross-section was 300 feet wide and averaged three (3) feet deep, although the maximum cut there was four (4) feet. The direction of the excavated channel in the bed of the river is shown on the tracing. A low dam one foot high, made by bolting a 12x12-inch timber to the rock bed, was thrown across the river at "F," just below the lower railroad bridge. This was done to maintain a sufficient depth for boating above the bridge. During last summer no water flowed at times north of the island, and the C. & E. I. R. R. and the City of Mokenca were obliged to blast out a ditch four (4) feet wide and twenty-two (22) inches deep from the upper point of the island at "G" to point "H" in order to supply water for tank purposes and fire protection.

Mr. Jos. L. Clark, who had charge of the excavation for the Commissioners, informed me that last fall he measured the low water flow of the river at Mokenca and found it to be 407 cubic feet per second, and he claimed that the 12-inch dam thrown across the river at "F" fully compensated for the additional cutting made in the bed of the stream from the upper point of the island to "C," so that as much water now flows north of the island as naturally would heretofore.

From Mr. Silas Metcalf, who lives and owns riparian rights at the summit, I understand that it is proposed to cut the summit seven (7) feet deeper, making a total cut at that point of ten (10) feet, although Mr. J. L. Clark stated that the plans thus far made, proposed the cutting at the summit to go four (4) feet deeper, making a total of seven (7) feet. I understand that the law passed recently, by the Legislature of Indiana, specified what width and depth at the summit the cutting was to be, and that the depth was to be seven (7) feet. I further understand that since the passage of the Indiana law, it has been proposed to form a drainage district under the laws of the State of Illinois, and through this latter agency cut the rock ledge still deeper.

Parties owning extensive tracts of land in the Indiana marshes are also interested in and have purchased considerable low land in Illinois above Mokenca. It is these who propose to form a drainage district in

Illinois. It is believed that, under an Illinois organization, plans may be matured and the rock cut down a total of ten (10) feet, if so desired. Should this be done the rock excavation will have to extend from about the point "D" to about the point "E" on the plat, and it is planned to cut a straight channel along the township line, from point "L," in the S. E. $\frac{1}{4}$ of Sec. 16, to the State line. A meeting of interested parties is to be held at Mokenca on May 3d next, for the purpose of taking steps to form a drainage district under Illinois laws.

So far as I could learn it is the general belief that the work, as yet done, will not be of much benefit in draining land in Indiana; however, it will more or less affect the drainage as far as the State line.

At each of Upper Indian Town and Lower Indian Town, in the south half of Section 13, is a boulder ridge. These ridges, or dams, are composed of boulders bound together by fine sand and their crests are as high as the original crest of the limestone ledge at "A." These dams to-day back water for many miles into Indiana. It is proposed in straightening the river in Illinois to avoid these boulders by cutting the new channel along the township line, as before stated.

During the excavation last fall, it was found that a bar of fine sand, nearly half a mile wide, lay against the upper side of the limestone ledge, and the rock was cut deep enough to allow this and other sand above to wash down the stream. I understand that the Indiana Commissioners congratulated themselves in their belief that such sand bars would wash down the stream and thus save expense of excavation; however, in places willows spring up on such sand bars and have a tendency to hold the sand from washing.

Beaver Lake, in Newton County, Indiana, originally flowed through Beaver Creek into the Iroquois, but about thirty-five (35) years ago, a ditch was cut from it to the Kankakee, on the north. This ditch was originally about $4\frac{1}{2}$ miles long, 6 feet wide on the bottom in the low ground, and 10 feet wide in the sand ridge, where the cutting was deepest. About three years ago, when my informant, Mr. W. J. Brown, last visited it, this ditch was 22 feet deep and 160 feet wide at surface of ground, and

60 feet wide on bottom at summit of the sand ridge, and would average 18 feet deep throughout, and 50 feet wide on the bottom. Beaver Lake is considerably higher than the Kankakee, into which it now flows. Artificial ditches, which have been dredged with comparatively little grade, and through which not sufficient water flows to keep them clean, have been known to drift full of sand.

The general character of the soil of the marshes is stated by men who have hunted over them for many years, to be very sandy. There is in places from 1 to 4 inches of black soil, but not sufficient to permit of continued cultivation. This black soil is underlaid with many feet of fine sand, and in places with quicksand. In some places, varying from an acre to a half section of land, the black soil is from a foot to five feet deep. There are vast sand tracts, however, which will, they believe, if drained, not only not grow grass, but will even drift with the wind. However, Mr. Clark, who had charge of the rock cut and surveys, said there are large tracts of fine land in the swamps, when they are once drained.

It is stated that when once the rock ridge in Illinois is cut down and the river straightened to the state line, the intention is to straighten and levee the river in Indiana as far up as English Lake. Should this be done, it is believed that large quantities of the fine sand above will wash through Momence and lodge in the river below.

I understand that a sand bar has recently appeared above the dam of the Aroma Mills, at Waldron.

Very respectfully yours,

(Signed) EBIN J. WARD,
Assistant Engineer."

(Accompanied by tracing.)

—
"CHICAGO, March 29, 1894.

To the Committee on Engineering and Finance:

GENTLEMEN—I return herewith the letter of Mr. Wm. J. Brown of Momence, Ills., relating to the removal of the rock ledge in the Kankakee River at that place; also further information relating to that work procured by Mr. E. J. Ward.

The only reference to this subject which

I find in the records of the Board appears in two letters of Attorney Geo. W. Smith to Attorney General Hunt, dated respectively September 17th and November 11th, 1890 (see pages 45 and 81 of Proceedings).

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

—
"CHICAGO, March 26, 1894.

Isham Randolph, Esq., Chief Engineer:

DEAR SIR—Since transmitting to you my report of the 21st inst., relative to the present condition of the limestone ledge in the bed of the Kankakee river at Momence, Ills., I have received from Mr. J. L. Clark, of Momence, who made the surveys for the improvement and had charge of the work for the Commissioners of Indiana, the following elevations—refer to "River Improvement Datum:"

	<i>Feet.</i>
Crest of lower dam at Momence.....	8.94
Crest of upper dam at Momence.....	9.72
Mean elevation of the highest cross-section of lime rock ledge in bed of river	6.7

The "River Improvement Datum," I understand, is the datum plane to which all elevations contained in the surveys made for the Commissioners of Indiana are referred.

Very respectfully yours,

(Signed) EBIN J. WARD,
Assistant Engineer."

—
"CHICAGO, April 5th, 1894.

To the Engineering and Finance Committee:

GENTLEMEN—This morning's *Tribune* has an item which reads as follows:

"DRAINAGE LAW UNCONSTITUTIONAL.

—
Decision in Indiana Invalidates Many Projects Now Under Way.

RENSSELAER, Ind., April 4.—(Special.)—Judge Wiley, of the Thirteenth Judicial Circuit, to-day decided the district drainage law of Indiana wholly unconstitutional. This law was passed by the Legislature of 1893, and is similar to one now existing in Illinois. It was framed by Benjamin J. Gifford, of Kankakee, Ill., a very large land owner in Champaign and Kankakee Counties, Ill., and in this county,

and the case decided today was the application of this law to the drainage of his ranch of 20,000 acres in this county. It was under this law that it was expected to drain the Kankakee River marshes, involving a half-million acres of land in this and adjoining counties. The decision has a far-reaching effect throughout Indiana, and will render invalid all proceedings commenced under the law."

This, I think, is the latest information we have in regard to the status of the Committee of the Drainage Law and its bearing upon the removal of rock ledge at Kankakee.

Yours truly,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

"CHICAGO, May 8th, 1894.

To the Committee on Engineering and Finance:

GENTLEMEN—Feeling that it was advisable that we should have the fullest knowledge attainable of what was being done by the Illinois and Indiana capitalists who are interested in deepening the Kankakee River at Momence, I sent Assistant Engineer Ward to Momence on the 3rd inst., to attend a meeting which was called by the interested parties for the purpose of determining what was the next thing to be done in carrying out their plans. Mr. Ward submits a report to me of what he saw and heard at that time, and I hand you a copy, herewith, of this report.

Yours very truly

(Signed) ISHAM RANDOLPH,
Chief Engineer."

(Enclosure)

"CHICAGO, May 4, 1894.

Isham Randolph, Esq., Chief Engineer, Etc.

DEAR SIR—Complying with your instructions I, yesterday, attended the meeting held at Momence, Ill., of parties interested in draining the marshes along the Kankakee River above that place.

The object of the meeting as stated by the Chairman, was to take further steps toward the formation of a drainage district within the State of Illinois, with a view to removing, yet more of the limestone ledge

in the bed of the Kankakee at Momence, and the straightening of the river channel from Momence to the State line.

There were about thirty-five or forty people at the meeting, and Mr. A. B. Kile of Englewood, acted as Chairman. Of those present, fully one-half came from Indiana and Michigan, and several of the remaining half, are, to my knowledge, strongly opposed to the project.

While the meeting purported to be a public gathering, the project being open to discussion, it was quietly understood among those who held different views from the Indiana contingent, that it would be just as well for them to make no remarks.

Mr. B. F. Gray, Attorney at Momence, stated that he had assisted in circulating among the owners of property along the river bottoms from Momence to the State line, a petition to the proper State authorities for the formation of a drainage district, and that the owners of two-thirds ($\frac{2}{3}$) of the acreage had already signed it. All of the largest land owners had signed, and he believed all would in time. He claimed that 12,000 acres would be benefited in Illinois.

Mr. Jos. L. Clark, the gentleman who has made the surveys for the work both in Illinois and Indiana, stated that there is a natural levee along the right bank of the Kankakee in Indiana, back of which the ground is lower than the present bottom of the river. He said that the channel, straightened as proposed, would have a length of about seventy miles and an average fall of from fourteen to sixteen inches per mile. The meandered length of the river above Momence, in Illinois, he said, is 9.5 miles, while the proposed straightened channel would be six miles long, and have a fall of eighteen inches per mile. Mr. Clark estimated that, not including rock work, it would require the removal of about 100,000 cubic yards to straighten the river from Momence to the State line. The work could be done, he thought, for from 6 cents to 7 cents per yard, which would not require a heavy assessment per acre on the land benefited. He advocated the digging of a channel eighty feet wide on the bottom.

W. R. Shelby, of Grand Rapids, Michigan, who controls the large Cass estate, which lies along the right bank of the

Kankakee in Indiana, next to the Illinois line, said that all the work done in the past in Indiana was thrown away and any further efforts to drain those marshes would be unsuccessful, unless more work is done in the bed of the Kankakee, between Momence and the State line. He stated that an assessment of 50 cents per acre on the land to be benefited would pay for all the work necessary in Illinois and Indiana to completely drain the marshes, and strongly advocated the appropriation of more money from the State Treasury of Indiana to aid or even do the work in Illinois.

John Brown, of Crown Point, Indiana, one of the Indiana Drainage Commissioners, and A. S. Vail, of Momence, took issue with Mr. Clark as to the necessary size of the proposed channel in Indiana. They contended that it was not necessary to construct a channel eighty feet wide, for they said a straight channel forty feet wide and having a fall of from fourteen to sixteen inches per mile would quickly scour out to a width of from eighty to one hundred feet, and to a depth amply sufficient to carry off all the water. It might be necessary, Mr. Brown said, to maintain a dredge to stir up any bars that might tend to form along the new channel.

The Illinois land owners present seemed somewhat loath to bear all of the expense necessary to be done in Illinois, and A. S. Vail, of Momence, insisted that it should be thoroughly understood that financial assistance was coming from somewhere. Commissioner Brown assured the Illinois people that such aid would be forthcoming, and he proposed the appointment of a committee of Indiana people—two from each county bordering on the Kankakee—to confer with the Illinois people upon this and other matters connected with the project, and to secure any needed changes in the Indiana drainage laws, at the next session of the Legislature of that State.

Mr. Brown and Mr. Shelby said that if the proposed work in Illinois is only done, the people here may rest assured that those interested in Indiana will do their share, and quickly push to completion the great project, by straightening the river until the entire marsh lands are drained.

When Commissioner Brown was asked where the sand would lodge, which he

stated in his address would scour out of a straightened channel 40 feet wide, until the channel would have a width of from 80 to 100 feet, he treated the matter lightly, and said that some might lodge in Indiana, and that it was quite immaterial, for though it might lodge in the Illinois river, people below would have to look out for themselves and take care of it. However, he afterwards claimed that it would all lodge in Indiana, and none would cross the State line. He endeavored to show that the flood heights would not be increased, but said that even if they were, that was none of their concern.

Mr. Shelby, of Grand Rapids, Michigan, said that such questions were "old straw," and had been threshed out long ago, and they did not care to go over the ground again.

Mr. Clark in an address at the meeting asserted that the completion of the proposed work of draining the marshes, by deepening and straightening the Kankakee, could not be prevented, but that the Sanitary District of Chicago is going to turn into the Illinois River a vast quantity of water from Lake Michigan that will do much harm. If any injury should be done along the Illinois, let it be met by "that gang" in Chicago.

That the sand will wash down stream is shown by the fact that there is already a deposit of one foot of sand in the channel at the summit of the rock cut finished last fall. It is believed that by giving a little additional grade to the cut in the rock, such deposit can in the future be prevented. When once this sand passes Momence the fall in the Kankakee will probably be great enough to keep it moving until it reaches the Illinois. I understand that the work done in Illinois thus far does not affect the drainage in Indiana, owing to the bowlder dams at Indiana town and the crooked channel of the river west of the State line.

The proposed new channel in Indiana, as shown on a map before the meeting, lies entirely on the right of the present river, at places from two to four miles away from the present stream and back of the natural levee in the low ground spoken of by Mr. Jos. L. Clark in his remarks before the meeting. It was stated that the northern slope of the watershed has, as a rule, much deeper soil overlying the sand than the

southern slope, and consequently will be much more fertile if the water can only be drained off. However, the entire marshes are underlaid with sand, much of which is quicksand, with streaks of clay here and there.

It is not denied that the spending of Indiana public money on the work in Illinois, in the past, was illegal, but they say "What are you now going to do about it?"

It seems to be the plan to form a drainage district of land owners in Illinois and then, if possible, secure another appropriation from the Indiana State Treasury, as a *donation* to the dummy Illinois drainage district for the completion of the work in this State. Failing to secure such an appropriation from the Indiana Legislature, private individuals, owning large tracts of land in the Indiana marshes, will, voluntarily donate to the Illinois drainage district nearly or quite all the funds needed to do the work in Illinois. Under such circumstances, if injury is done in Illinois, who can be made legally or financially responsible therefor? It did not seem to be agreeable to those interested in furthering the project, to have questions asked as to the proposed plans and the possible effects in Illinois.

The committees appointed were composed of the following gentlemen:

Illinois Committee.

Thomas Buntain, Momence, Ill.

A. S. Vail, Momence, Ill.

Jos. L. Clark, Momence, Ill.

B. F. Gray, Momence, Ill.

Mr. Hayden, Shyrbenville, Ill.

Indiana Committee.

John Brown, Crown Point, Lake County.

Wesley Greisel, Lowell, Lake County.

J. S. Long, La Cross, La Porte County.

G. S. Dennison, Hannah, La Porte County.

H. A. Elliston, Hamlet, Stark County.

John McLaughlin, San Piere, Stark County.

W. S. Pence, Demott, Jasper County.

A. Hallock, Demott, Jasper County.

W. E. Pinney, Valparaiso, Porter County.

A. E. Stowell, Wilders, Porter County.

Respectfully yours,

(Signed)

EBIN J. WARD,

Assistant Engineer."

"THE KANKAKEE WATERSHED.

(Extract From Report of State Board of Health,
Under the Title of Water Supplies of
Illinois—1889.)

The Kankakee unites with the Desplaines to form the Illinois, after running for two miles in Grundy County and just west of the Will County line. It drains an area of 5,146 miles, 3,040 of which lie in the State of Indiana and the remainder in Illinois, principally in Will, Kankakee and Iroquois counties.

The general direction of the basin is east and west, with an extreme length of 216 miles and a greatest width from north to south of about 70 miles. The watershed may be considered as one basin lying between the main rim ridge of the lake and the outer ridge of the Lake Michigan glacier, these two ridges closing in Indiana in harmony with the effects of the Saginaw and Lake Erie glaciers. Although the general area is not subdivided by well defined ridges, 2,000 square miles drains to the Iroquois, the main tributary, and some 650 miles to the Yellow River in Indiana, also a tributary from the south. There are no other well defined tributaries from the south, except Horse Creek, an area of about 100 miles, entering the stream four miles above Wilmington. All of the northern tributaries are in small watersheds of 50 to 100 miles, and are simply drains for the slope of the northern bounding ridge.

Below Momence on the Kankakee and the north line of Iroquois County on the Iroquois, the streams descend rapidly and the general slope of the country is ample for good drainage. This area is some 770 square miles, and its general characteristics are similar to the Desplaines watershed. The same may be said of some 430 miles along the slope of the northern ridge east of this district. The remainder of the watershed, nearly 4,000 miles, is flat or gently rolling and at least one-half in marsh, wet prairie or lake, the Kankakee marsh alone covering about one thousand miles as a single body of land.

The larger proportion of the basin is underlain by the Niagara limestone, with possibly some Devonian and Carboniferous beds under the upper part of the basin in Indiana. The lower coal measures underlie the headwaters of the Iroquois, and it is supposed that the series of rocks adjacent

to the great anticlinal axis may be upturned in narrow outcrops beneath the drift in the southwest portion of Iroquois County. From Momence on the Kankakee and the county line on the Iroquois, the Iroquois and Kankakee are cut in the Niagara limestone as far as the Will County line, and thence to the mouth in the shaly calcareous beds of the Cincinnati group.

Owing to the depth of the drift, the character of the underlying rocks is not well defined over a large portion of the basin. They do not belong to groups carrying any considerable water bearing strata, although the lower courses of the Niagara and the Cincinnati group may furnish a limited supply to the lower Kankakee. The copious supply from shallow artesian wells, flowing water from the base of the drift, is supposed to come from the upturned edge of the St. Peters sandstone, unable to find an outlet through the impermeable clays of the upper drift. This area is limited and in the southwest portion of Iroquois County, a region drained by Spring Creek, a considerable tributary of the Iroquois River. Doubtless as the name of this creek indicates, some of the pent up waters find their way to the surface.

Geological studies indicate above the rock ledges at Momence and on the Iroquois, an old trough from Lake Michigan, several miles in width. The course of this channel is southwestwardly, gradually curving westerly under the site of Bloomington and to the valleys of the Sangamon and Illinois. The surface features left by this old channel are almost obscured by the last glacial period, the channel is entirely filled and obliterated. It represents some glacial track and it may have had the same relation to the valley of the Sangamon and the great central basin of the State that the last glacier had to the present Illinois.

The drift overlies the rock, generally to a depth of not less than 100 feet, its depth not being well ascertained over the upper basin. It is unmodified or arranged by flowing water in large part and to that extent is not water bearing. At the same time there are probably a larger depth of superficial deposits of a permeable character than in any other basin of the Upper Illinois watershed.

There is a larger proportion of sand and

gravel beds upon the ridges and throughout the watershed. Glacial flow has more or less arranged the deposits above the unmodified drift over a considerable proportion of the lower areas. The drainage of the retreating Saginaw glacier, and perhaps of the Lake Erie glacier also, flowed down the valleys of the Kankakee and Iroquois in a shallow bed, several miles in width, carrying all the finer clays and leaving only the heavier sands and gravels. The shores of these old streams are ridged in sand, the outlines of the present great marsh in Indiana, of the valley of the Iroquois, and these sand deposits continue down the deep cut valley below the junction, especially on the south side, well down into Grundy County.

The character of the drainage upon the northern slopes has been already alluded to. To the south it is much flatter and greatly diversified in marsh, lake and roll. This is true in a remarkable degree of the watershed of the Yellow River in Indiana, and to a less degree of the Iroquois in Indiana, and in Iroquois and Ford counties, Illinois.

The banks of streams, the ridges and the higher and more permeable areas with natural drainage have been generally wooded, especially in Indiana. Some of the sandy deposits have, however, been too barren to sustain any considerable vegetation of any kind.

The surface is generally covered to a good depth with soil, though, as already inferred, much of it partakes of a sandy character. The great areas of marsh are virtually prairies in process of formation, in a manner not unlike that pursued by nature in past ages.

The great marsh in Indiana demands special notice. It heads very near to the big bend in the St. Joseph River at South Bend, Indiana, and indeed the St. Joseph Valley is but the general continuation to the E. N. E. of the Upper Kankakee Valley. It would be a matter of no great difficulty to turn the waters of the St. Joseph across the portage and down the Kankakee, a route followed so often by the early French voyageurs. Already a portion of the marsh has been drained across the portage to the St. Joseph River.

The elevation at the summit is 145 feet above Lake Michigan. The head of the

present marsh is 141 feet above the lake, or 104 feet above the dam at Momence, and the declivity is very uniformly distributed over the general length of the marsh, 82 miles, giving a grade to the valley of 1.27 per mile. The width of the marsh varies from one to twenty miles, with an average of about ten miles, and its mean elevation is 90 feet above Lake Michigan. The area of lands which would be benefitted by the reclamation of the marshes as assessed by the Kankakee Valley Draining Company, was about 1,000 square miles. An official report made to the Governor of Indiana in 1882, gave the lands to be directly reclaimed at 400,000 acres, or 625 square miles.

The same report gives the character of the underlying deposits. The soil proper is a dark, sandy loam, ranging in thickness from one to five feet, underlaid by fine sand, increasing downward to coarse sand and gravel, with occasional thin clayey layers, all to a depth of eight to ten feet. No rock was encountered in any portion of the valley.

Father Stephan, who was long interested in land reclamation, gives the length of the river in Indiana at 242 miles, while by the general course of the river it is but 88 miles, a development in bends of over $2\frac{1}{2}$ times the general length, the average grade being about five inches per mile. Down to Momence, the stream would be 252 miles in length, on a course of about 95 miles.

Above the Ft. Wayne Railroad crossing, the stream flows through the marsh without well defined banks, and it is only after its junction with the Yellow River that it can be properly considered a river. Above the junction, the area is 1,300 square miles, equally divided between the Kankakee and Yellow Rivers. This area is about 60 per cent of that above Momence. The small tributaries are usually lost in the marsh before reaching the main stream.

From the junction of the Yellow River to Momence, the general distance is 60 miles, and the fall 57 feet, or nearly one foot per mile. The developed length is probably about three times the general course of the stream. The stream is a clear, flowing body of water, with a depth of three to five

feet at low water, and with a sandy, gravelly bed.

At Momence are two dams, on opposite sides of an island, the crests three feet above the limestone outcrop in the bed of the river above. The river drops to eight feet below the crest of the dam in one-fourth mile, and in a rock bed falls 20 feet more in 14 miles, to the junction of the Iroquois, after passing the dam at Waldron, $6\frac{1}{2}$ feet high. The total area of the watershed is 2,540 square miles, of which 2,342 miles lies above Momence, and 2,212 miles in Indiana.

The Iroquois has an area of watershed of 2,000 miles. It is of steep declivity over rock for about five miles through Kankakee County, but above this, the stream is of little grade and of good depth, navigable, in fact, to Watseka, the junction of Sugar Creek. Above this, the stream is more broken, and comes directly from the east, the area in Indiana being 823 miles. The area at Watseka, including Sugar Creek, is roughly, 1,500 miles, or three-fourths the total watershed.

The principal tributaries below Watseka are Spring Creek and Longham's Creek, both heading in marshy areas in Ford County, and Beaver Creek, a marsh draining stream. The large proportion of marsh upon the Iroquois watershed has already been alluded to. No data are at hand in regard to the elevations, height of floods and volume of water in this stream.

The lower Kankakee, at the junction of the Iroquois, is nine feet above Lake Michigan, and descends rapidly over a rock bed to its junction with the Desplaines, 93.8 feet below Lake Michigan, a total fall, in round numbers, of 103 feet in a distance of $33\frac{1}{2}$ miles, or about three feet per mile. There is a precipitous descent of some 20 feet at Altorf, and another of like amount at Wilmington. The drainage tributary is 606 square miles.

The following table gives the distances from the mouth of the river and the elevations at low water, referred to Chicago datum. The data at hand are somewhat confusing, but the results are believed to be approximately correct:

PLACE.	Distance.	Elevation.	Remarks.
Illinois River.....	0.00	—93.7	Junction with Desplaines.
County Line.....	2.25	—89.1	East line Grundy County.
State dam (above).....	5.25	—67.6	Feeder of Canal.
Dam No. 1 (above).....	6.00	—58.5	Kankakee County, 12 feet high.
Dam No. 2 (above).....	10.00	—49.5	Wilmington, 11 feet high.
Dam No. 4 (above).....	11.50	—37.0	Great dam, 16 feet high.
Foot of rapids.....	21.50	—37.0	.....
Altorf.....	22.50	—17.0	Dam destroyed.
Kankakee City.....	30.00	+ 1.0	Below dam.
Kankakee City.....	30.00	+ 9.0	Above dam.
Mouth of Iroquois River....	33.50	+ 9.0	In Kankakee pool.
Waldron.....	35.00	+16.0	Above dam, 6½ feet high.
Momence.....	47.25	+29.0	One fourth mile below.
Momence.....	47.50	+37.0	Pool, above dam.
State Line.....	54.50	+40.0	General distance.
Baums Bridge.....	82.50	+79.0	General distance.
Mouth of Yellow River.....	107.00	+94.0	General distance.

The Kankakee feeder joined the canal in a course of 4¼ miles from the State dam, at an elevation of 68 feet below the Chicago datum. In connection therewith, the navigation company improved the river to the head of the pool created by the Great Dam above Wilmington, 21 miles from the Illinois and Michigan Canal. The company abandoned the structures some years since, except those necessary for water power in Wilmington, and Dam No. 1 has been cut down two feet. The feeder was abandoned by the Canal Commissioners in 1888, and the dam is in bad condition. Dam No. 3 at Wilmington is on the opposite side of the island from No. 2. It will be seen that the Kankakee is crossed by dams at seven points.

The general height of the immediate banks of the stream in Indiana is not found, but in one report it is stated that a rise of eight feet will flood the marshes for several miles in width. At the State line, high water is about six feet, and on the dams at Momence 0.83 feet, and immediately below, two feet. Below Momence, high water is reported at ten feet, and below the mouth of the Iroquois not over eight feet, until near the mouth of the river. This no doubt varies, being less on the quick descents and more on the easier slopes. In 1887, the water rose ten feet at Wilmington, below the lower dam, and at the mouth of the river nearly sixteen feet.

The banks of the river are stated to be

fifteen feet high at Momence, growing higher as the stream is descended. At Kankakee they are stated at twenty-five feet, increasing toward the mouth to thirty-five feet. There are some limited areas of bottoms between Momence and Waldron, but practically none from Waldron to the mouth; in other words, no overflows occur on the Kankakee below Momence.

The data in regard to the flow of water in the rivers of the Kankakee watershed are very meager.

The flood volume at Momence can only be inferred from the hydraulic conditions as set forth in various reports. It is probably not far from 6,000 cubic feet per second at the high water mark of an occasional year, or this may be assumed as extreme mean high water, beyond which floods will not occur once in a generation.

Considering the fact that 2,342 square miles of watershed are above Momence, or 45 per cent of the total area of the Kankakee basin, this volume is remarkably small, and shows the impounding effect of the Kankakee marshes. Were all the conditions normal, the flood volume at Momence would be about 26,000 cubic feet per second.

The practical effect of the marshes is similar to that of a lake, reducing the extreme volume and prolonging the time of floods, while at the same time a considerable proportion of the waters is retained to maintain the ordinary flow of the stream. The highest waters in the marshes occur in

summer, when vegetation retards the ready discharge, though it is doubtful if this corresponds to the greatest volume carried by the stream.

At Wilmington, the flood of 1887 culminated on February 19th, with a volume over the great dam of 25,150 cubic feet per second. A rise of less height occurred on the 11th. It was this earlier rise, in combination with the rise which culminated at Joliet on the 11th, that gave the high water at Morris on the 11th, 12th and 13th. The second rise at Morris, on the 19th, came within one foot of the first, but the flow of water from the Desplaines was less. The high water of 1887 is regarded as a remarkable one, the highest for ten years at Wilmington.

Mr. E. S. Waters, who was engineer for the Water Power Company, gives the highest water which occurred for the twelve years ending 1883. His results indicate a maximum flood of 35,000 cubic feet per second. The breaking of an ice gorge above the dam in 1883 occasioned a temporary discharge of over 100,000 cubic feet per second.

Two of the most notable floods occurred in 1851 and in 1867, the latter accompanied by an ice gorge, and referred to at Wilmington as the greatest known. Other remarkable years were 1830, '37, '44, '53, '58, '69, '76 and '81, though all these dates have not yet been verified. This would give twelve notable floods from 1830 to date, or an average of one each five years.

Some of these have doubtless exceeded 30,000 cubic feet per second, and this may be assumed as mean extreme flood volume. Probably any flood exceeding a volume of 20,000 cubic feet would be classed as a notable one.

The area of basin above Wilmington is 4,926 square miles. Were its characteristics similar to those of the Desplaines basin, the flood volume at Wilmington should exceed 47,000 cubic feet per second.

If 30,000 be assumed as mean extreme flood, these volumes would be increased about four per cent. at the mouth.

Owing to the area of the basin and its large proportion of flat ground and marsh, floods culminate slowly. At Wilmington the floods generally take two and a half to three days to culminate after heavy general precipitation. The following extract

from a letter from Mr. E. S. Waters, engineer of the Waterpower Company at Wilmington for over twelve years, and who was interested in observing such matters, covers all that need be said upon the matter at this time:

"It is difficult to give any definite answer to your inquiries for the reason that the winter and spring freshets bring the storm waters to Wilmington sooner than the summer or autumn rains. Usually, after a heavy general rain, the river begins to swell in about eight hours after a heavy downfall, the river becoming blackish roily, such water coming from the drainage valley of Horse Creek. Twelve hours after the storm, the river swells still more, retaining the same general color, which is caused by waters from Rock Creek. The Upper Kankakee (probably below Mokence) brings down clearer water so that the color of the freshet water is made materially lighter in color. The freshet reaches its height in about 36 hours from commencement of rise, and the waters will then fall a few inches until the Iroquois waters again swell the river, such water making its appearance in from 36 to 40 hours, and being light yellow in color, caused by the wash of the clay banks on the Upper Iroquois."

"A heavy rain that fills the marshes of the Upper Kankakee will keep up a good supply for six weeks even in time of *extreme drouth*. These marshes act as a large gathering ground, and the exit from the marshes being narrow and the stream very crooked, the water is impounded and the marsh acts as a reservoir."

It is to be inferred from this letter and also from the general conditions that the Upper Kankakee does not contribute materially to the maximum volume, but comes in later to prolong the rise.

The extreme low water at Wilmington for the twelve years preceding 1883, from data furnished by Mr. Waters, was 420 feet per second (25,200 feet per minute). This, however, continued for less than one week. The usual low water run is given at 1,300 cubic feet per second (7,000 cubic feet per minute) and the common run for eight months in the year does not fall below 2,350 cubic feet per second (201,000 feet per minute).

On September 9, 1867, a measurement

was made near the mouth of the river in connection with the survey for the improvement of the Illinois River. The volume was 27,377 cubic feet per minute. The streams are said to have been lower in 1867 than for the preceding twelve years.

Two measurements were made above Mokence, December 12-13, 1871, for the Kankakee Draining Company, and the volumes ascertained have been used as the ordinary flow of the stream for the purpose of computing the capacity of ditches for draining the marshes. The measurement at the State line gave 1,271 cubic feet per second (76,260 cubic feet per minute), and at Mokence, 1,457 cubic feet per second (87,420 cubic feet per minute). The flow for eight months is probably in excess of these volumes. They are not far, however, from what Mr. Waters gives as ordinary low water at Wilmington, and it is known that this is maintained largely by the flow from the marshes above Mokence. No data are in hand in regard to the flow from the Iroquois.

The mean extreme low water at the mouth may be taken at 30,000 cubic feet per minute. The volume has been less than this twice, if not three or more times, in thirty years. It is probable that the minimum will run under 76,000 cubic feet per minute for some months of nearly every year.

The effect of inhabitation will be most marked upon the flow of waters from the Kankakee basin. This tributary, more than any other, and in a degree only approached by the Fox, is the controlling factor in the regimen of the Illinois River as far as the mouth of the Sangamon. More, also, than any other will its regimen be radically changed by the reclamation of its marshy areas and the general improvements that will be made in the drainage of its lands during the next fifty years.

In a minor and desultory way, much has already been done to make apparent the tendencies. The borders of the great marshes have been narrowed, drainage districts have been organized and put ditches through large areas, minor areas have been ditched by local owners and lands tiled; everywhere and constantly, the tendencies are to destroy the reservoirs which hitherto have maintained an equable flow. Already it is noticed that floods

"come quicker" than formerly and the low water's volume is less sustained.

All this drainage is easily accomplished, the only obstacle being that association of effort which has not hitherto proved practicable. The great bodies of marsh all have ample grade, the waters are impounded by the rank vegetation upon the considerable slopes, the streams are sinuous lines of sloughs, which void the water slowly; in fact, we have in the Kankakee basins great prairies in process of formation in a manner not unlike that by which prairies have formed in the past. Gradually they grow higher, imperceptibly the water is more largely confined to the line of drainage, the stream grows more defined and capacious, discharging the waters more rapidly, broad expanses, overflowed in high water, succeed, the wet prairie stage is reached. The channel is defined, it crooks and loops about in order to keep its grade down, so that its velocity shall not exceed the limit for a stable channel. With this process, however, there comes a time when the growing capacity of the stream is greater than is consistent with stability, when the increasing velocity moves the material of the bed in a greater degree, bends erode, cut-offs occur. The equilibrium is destroyed, the stream concentrates, shortens, cuts deep into the superficial deposits until its grade is reduced to stability, or non-erodable strata or sorted stream bed arrests its further deepening. The prairie is drained, a deep drainage line, perhaps a valley, is excavated, and lateral drains or valleys are thrown out. This, in a few words, is the general process of evolution.

The Kankakee marsh is a great prairie in process of formation, on a general slope of one foot per mile, much too great for a stable river in an alluvial channel. It is underlaid by many feet of sand and gravel. It has a sinuous drainage line, with all the development in length possible without its bends looping into each other, and thus its grade and velocity are reduced so as to be in equilibrium with the material of its bed; thus it maintains a stable course. A few cut-offs, a shortening of the stream, will quicken its velocity, set it to eroding its bed and banks, gather in more rapidly the overflow waters, and thus, in a few years, a radical change may occur.

It is proposed to cut down the rock barrier at Mومence and remove the dams. The State of Indiana is already making provision for the execution of a great main ditch, which will have three times the grade of the original stream and be much deeper, as proposed in the report of 1882.

Such a ditch will undoubtedly drain the marshes. It will do more. It will enlarge, deepen; lateral drains will cut out through the marsh until the underlying clay is reached, when the erosion will be less pronounced. Millions of yards of sand and silts will be carried down the Kankakee, will pass the heavier grades of the Illinois and stop in the lower river, where present natural forces will be inadequate to their removal. All this will occur quickly, within a few years after the main ditch is so developed as to gather the waters. The marsh will be deeply drained, and man has only to initiate the effort.

All this in a minor degree will occur in the drainage of other marshes, but none of them are so characteristic or extended in the peculiar development described.

While it may not be public policy to obstruct such operations, we must not be unmindful of the effects. It is sometimes possible to make the injury as little as consistent with the greater purposes to be accomplished.

No doubt within fifty years all the marshes will be reclaimed, the wet lands drained, the bogs, ponds and lakes reduced. The streams of the Kankakee watershed will then be subject to conditions differing radically from the present.

It will have quite a large proportion of its area permeable to a considerable depth on comparatively level surfaces. This condition will reduce floods, distribute flow in the streams and make the low water more persistent as compared to some other basin like the Desplaines for instance. At the same time it lies in a uniform latitude, so that the snows will melt over its basin more uniformly and it lies more nearly in the track of the summer storms.

It is doubtful if its flood volume will be less in proportion. The ordinary flow will be better maintained on account of the greater proportion of permeable strata. The extreme low water volume in some years of persistent or in succeeding years of drought will be proportionally as low, as

the permeable areas are of two little depths and the drains may not cut sufficiently deep to even get their full effect.

If these general ideas be applied then there may be expected ultimately a flood volume at Mومence of not less than 26,000 cubic feet per second, or four times the present volume, and it will come quicker and be less prolonged. At the mouth of the river the volume will probably increase to 45,000 or 50,000 cubic feet per second, or be increased over 50 per cent beyond the present extreme floods.

The low water volume at the mouth occurring in an occasional year may be less than 5,000 cubic feet per minute, one-sixth of that now assumed, and it will probably be less than 10,000 cubic feet per minute in many years. The Yellow River, many years ago, in its natural condition, with its large development in lake and marsh and timber, gave a measured flow as low as $1\frac{1}{4}$ cubic feet per minute per square mile. This has since no doubt sensibly reduced. The entire watershed will doubtless give less in time.

A large proportion of these effects are likely to be brought about quickly by the wholesale draining of great marsh areas. Accompanying such operations will be an enormous increase in the supply of detritus until the drainage lines are finally established in natural equilibrium. Even then the detrital load will be multiplied over the present amount, as the increased washings from the tilled and sandy ground will no longer be impounded in the adjacent marsh, but will go to the drainage channels.

It will be seen how radically detrimental to the interests of the Illinois Valley may be the complete reclamation and inhabitation of the Kankakee watershed."

TEMPORARY BRIDGE AND TRACK OVER MAIN CHANNEL AND RIVER DI- VERSION ON SECTION 10.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, transmitting agreement, in duplicate, and bond, with Nicholas Bodenschatz, for a temporary bridge and track over the Main Channel and River Diversion on Section 10, as provided in the report and accompanying agreement; and recommending that the President and Clerk be authorized and directed to execute the said agreement,

on behalf of the District, as provided in the report; and the report was read.

Mr. Cooley, seconded by Mr. Altpeter, moved that the report be adopted, ordered printed, and, with accompanying agreement and bond, placed on file, the recommendations made in the report concurred in, and the President and Clerk authorized and directed to execute said agreement on behalf of the District, as provided in the report.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Cooley, Russell and Wenter—four (4). Nays—Messrs. Eckhart, Kelly and Prendergast—three (3). Excused and not voting—Mr. Bolden-weak—one (1).

Upon which result the President declared the motion lost.

The following is

THE REPORT:

“CHICAGO, November 20, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Committee have under consideration the application of Nicholas Bodenschatz for permission to cross the right of way of the District in Section twenty-six (26), Township thirty-seven (37) North, Range ten (10) East of the Third Principal Meridian, in Will County, with a single track railroad suitable for the transportation of stone, and to erect a temporary bridge over the Main Channel, and also a bridge at the River Diversion.

The object sought is to gain access to the Illinois and Michigan Canal until our own Channel shall have been completed. Your Committee are averse to granting any rights of a permanent nature, but at the same time are of the opinion that the District should not be an obstacle in the way of owners of property in the development of same.

We have accordingly directed a form of agreement to be prepared, which is in the nature of a permission or license, revocable at pleasure, to cross the land of the District at the place and in the manner specified therein, and with strict provisions for vacating the right of way and removing the bridges at any time on notice by the District so to do. An indemnity bond is also provided for.

We transmit herewith the form of agree-

ment, in duplicate, executed by Mr. Bodenschatz, and the bond required by the agreement, and recommend that the President and Clerk be directed to execute said agreement on the part of the District.

Respectfully submitted,

(Signed) L. E. COOLEY,

Chairman.

W. H. RUSSELL,

JOHN J. ALTPETER,

Joint Committee on Engineering and Finance.”

(Accompanied by agreement, in duplicate, and bond).

REPORT OF JOINT COMMITTEE ON ENGINEERING AND FINANCE ON SUNDRY MATTERS REFERRED AND PENDING.

Mr. Cooley, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to sundry matters referred to that Committee at sundry meetings as set forth in the report, on which no action had been taken, and which are still pending; and the report was read.

Mr. Cooley, seconded by Mr. Russell, moved that the report be adopted, ordered printed and placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is the

THE REPORT:

“CHICAGO, Dec. 2d, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Upon the several subjects referred to this Committee and still pending, your Committee reports progress as follows:

Bids for Constructing Regulating Works at Lockport:

In the matter of the construction of the regulating works at Lockport, on which bids were received Nov. 20, 1895, (page 2944 of the Proceedings) the questions have required more extended consideration than was permitted by the time at the disposition of the Committee, and we are therefore unprepared to make any report.

Measurement on Masonry on Sections 6, 7, 8, 12 and 13:

The two communications from Mason, Hoge & Co. and Mason, Hoge, King & Co.,

presented and referred at the meeting held Nov. 20, 1895, (page 2941 of the Proceedings) raised the entire question of the measurement of retaining walls where masonry is required in the preparation of the foundations. The subject demands extended consideration, and more time than the Committee has had at its disposal.

Spoiling of Material Excavated on Section H:

In the matter of the spoiling of the material on Section H, which was raised by report of the Chief Engineer presented and referred at the meeting held Nov. 6, 1895, and the communication of Gahan & Byrne, contractors for said section, presented and referred at the meeting held Nov. 27, 1895, (pages 2912 and 2969 of the Proceedings) the Committee has been unable to come to any final understanding in the premises.

Plans for Improvement of Chicago River:

In regard to the report of the Chief Engineer upon the improvement of the Chicago River, presented and referred at the meeting held August 19, 1895 (page 2774 of the Proceedings), your Committee has instructed the Chief Engineer to prepare plans in greater detail, with a view to the consideration of the question. The Chief Engineer has not yet furnished the information asked for.

Condition of River Diversion Levees:

Your Committee has reached no conclusion in regard to the recommendation of the Chief Engineer November 13, 1895, referred on that date (page 2918 of Proceedings).

In regard to several matters which the Committee has had under advisement at various times, we are unable to report any additional progress in regard to railway and bridge settlements, application of "Clause J" of the contracts, or upon the provision of escapes along the rock sections between Willow Springs and Lockport.

Respectfully submitted,

(Signed) L. E. COOLEY,
Chairman.

W. H. RUSSELL,

B. A. ECKHART,

THOMAS KELLY,

WM. BOLDENWECK,

JOHN J. ALTPETER,

Joint Committee on Engineering and Finance."

ORDER FOR REPAIR OF RIVER DIVERSION LEVEES.

Mr. Cooley presented an order authorizing and directing the Chief Engineer to apply \$8,000, or so much thereof as necessary, to the work of repairing and completing the system of River Diversion levees, as provided in the order; and the order was read.

Mr. Eckhart, seconded by Mr. Boldenweck, moved that the order be printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the order was ordered printed and so referred.

The following is

THE ORDER:

"WHEREAS, The Chief Engineer, in report dated November 20, 1895, recommended certain repairs of the levee system between the Desplaines River and the Main Channel; and

WHEREAS, Some 2,800 feet of embankment on Section 11 has never been completed to the standard prism so as to conform to the twenty miles of levee between the spillway above Summit and the Romeo Road; therefore, be it

Ordered, That the Chief Engineer be and he is hereby authorized and instructed to apply eight thousand (\$8,000) dollars or so much thereof as may be necessary, to the work of repairing and completing the levee system, so that the same shall conform throughout to the standard prism, and be safe in any emergency."

ORDER FOR PUBLISHING OF PRESIDENT WENTER'S MESSAGE.

Mr. Kelly presented an order directing the Clerk to publish, in pamphlet form, 500 copies of President Wenter's message and accompanying reports, as provided in the order; and the order was read.

Mr. Kelly, seconded by Mr. Russell, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Russell and Wenter—seven (7). Excused and not voting—Mr. Prendergast—one (1). Nays—None.

Upon which result the President declared the motion carried, the order adopted, and the Clerk directed in accordance with the same.

The following is

THE ORDER:

"*Ordered*, That five hundred (500) copies of the retiring President's message, together with the reports of the executive officers accompanying said message (excluding the inventories), and also including the report of the Sanitary Inspector of October 30th, 1895, and of the Labor Statistician, be printed in pamphlet form by the Clerk for distribution."

APPOINTMENT OF COMMITTEE TO APPROVE MINUTES.

Mr. Kelly, seconded by Mr. Boldenweck, moved that a Committee of three be appointed by the President to read the minutes of this meeting, as made up by the Clerk, and report thereon to the Board, and further that the Board take a recess of ten minutes.

The motion prevailed unanimously, and it was so ordered.

Whereupon the President appointed as a Committee to read and report on the minutes of the meeting, Messrs. Kelly, Cooley and Boldenweck.

The Board then took a recess of ten minutes, pursuant to motion.

On re-assembling at the close of the recess, on roll-call Messrs. Altpeter, Boldenweck, Cooley, Eckhart, Kelly, Prendergast, Russell and Wenter—eight (8) members, were present.

REPORT ON APPROVAL OF MINUTES OF THIS MEETING.

Mr. Kelly, Chairman, presented a re-

port from the Committee appointed to read and report on the minutes of this meeting, recommending that the same be approved as made up by the Clerk; and the report was read.

Mr. Kelly, seconded by Mr. Cooley, moved that the report be adopted, ordered printed and placed on file, and the recommendations made therein concurred in.

The motion prevailed unanimously, and the President declared the minutes of the meeting, as made up by the Clerk, approved.

The following is

THE REPORT:

"CHICAGO, December 2, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—We have read the minutes of this meeting, as made up by the Clerk, and recommend that the same be approved.

Respectfully submitted,

(Signed)

THOMAS KELLY,

Chairman.

L. E. COOLEY,

WM. BOLDENWECK,

Committee."

ADJOURNMENT.

On motion of Mr. Cooley, seconded by Mr. Boldenweck, the Board then adjourned.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

DECEMBER 3 AND 4, 1885.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees of
the Sanitary District of Chicago).*

ANNUAL MEETING.

The Sixth Annual Meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Tuesday, December 3, 1895, at 2 o'clock P. M., pursuant to the rules.

The Clerk called the Board to order, and stated that he had been officially notified by the Clerk of the Board of Election Commissioners of the election on November 5, 1895, as Trustees of the Sanitary District of Chicago, of the following gentlemen, whose certificates of

election he had received and placed on file:

WILLIAM BOLDENWECK,
JOSEPH C. BRADEN,
ZINA R. CARTER,
BERNARD A. ECKHART,
ALEXANDER J. JONES,
THOMAS KELLY,
JAMES P. MALLETTE,
THOMAS A. SMYTH,
FRANK WENTER.

On roll-call Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9) members were present.

ELECTION OF TEMPORARY CHAIRMAN.

Mr. Carter, seconded by Mr. Boldenweck, moved that the Board do now or-

ganize, and that Mr. James P. Mallette be elected Temporary Chairman.

The motion prevailed unanimously, and Mr. James P. Mallette was declared duly elected Temporary Chairman.

Mr. Mallette then took the Chair.

ELECTION OF PRESIDENT.

Mr. Boldenweck, seconded by Mr. Carter, moved that the Board do now proceed to the election of a President of the Board of Trustees.

The motion prevailed unanimously, and the Chairman declared the election of a President of the Board of Trustees then in order.

Mr. Boldenweck nominated Mr. Bernard A. Eckhart as President of the Board of Trustees for the ensuing year.

Mr. Kelly nominated Mr. Frank Wenter as President of the Board of Trustees for the ensuing year.

There being no further nominations, Mr. Jones, seconded by Mr. Carter, moved that the Board elect the Presi-

dent for the ensuing year by regular roll-call.

The motion prevailed unanimously, and it was so ordered.

On roll-call the vote stood:

For Mr. Eckhart—Messrs. Boldenweck, Braden, Carter, Mallette and Wenter—five (5) votes.

For Mr. Wenter—Messrs. Eckhart, Jones, Kelly and Smyth—four (4) votes.

Upon which result the Chairman declared Mr. Bernard A. Eckhart duly elected President of the Board of Trustees of the Sanitary District of Chicago for the ensuing year.

Mr. Eckhart then took the Chair and thanked the members of the Board.

ADJOURNMENT.

On motion of Mr. Kelly, seconded by Mr. Boldenweck, the Sixth Annual Meeting of the Board of Trustees of the Sanitary District of Chicago then adjourned.

THOS. F. JUDGE,
Clerk.

REGULAR MEETING.

The two hundred and ninety-second regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, December 4, 1895, at 2:00 o'clock P. M.

President Eckhart called the Board to order.

On roll call Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9) members were present.

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

CLAUSE "J"

Total Retained.	Amount released on this Voucher.
-----------------	----------------------------------

*Construction Account—

Griffiths & McDermott, (Sec. 1, Nov. 16, 1895).....	\$14,364 17
McArthur Brothers, (Sec. 2, Nov. 16, 1895)	4,760 00
Gilman & Company, (Sec. 3, Nov. 16, 1895)	12,586 87
McArthur Brothers, (Sec. 4, Nov. 16, 1895)	557 38
The Qualey Construction Co., (Sec. 5, Nov. 16, 1895).....	2,696 75
Mason, Hoge & Company, (Sec. 6, Nov. 16, 1895).....	7,203 00
Mason, Hoge & Company, (Sec. 7, Nov. 16, 1895).....	6,302 62

\$13,639 67 \$ 974 29

*Paid by regular warrants drawn against the current fund of the District.

CLAUSE "J"
Total Amount re-
Released on
this Voucher.

Mason, Hoge, King & Co., (Sec. 8, Nov. 16, 1895).....	\$ 4,840 06		
Mason, Hoge & Company, (Sec. 11, Nov. 16, 1895).....	9,465 42		
Mason, Hoge & Company, (Sec. 12, Nov. 16, 1895).....	3,547 91		
Smith & Eastman, (Sec. 14, Nov. 16, 1895)	10,858 75		
Wright, Meysenburg, Sinclair & Carry, (Sec. 15, Nov. 16, 1895).....	9,808 75		
Heldmaier & Neu, (Sec. A, Nov. 16, 1895)	6,640 26	\$26,259 41	\$ 177 62
Heldmaier & Neu, (Sec. B, Nov. 16, 1895)	4,954 16	8,308 17	450 90
Western Dredging & Improvement Co., (Sec. C, Nov. 16, 1895).....	4,503 18		
E. D. Smith & Co., (Sec. D, Nov. 16, 1895)	5,852 60		
Angus & Gindele, (Sec. E, Nov. 16, 1895)	3,945 38	6,885 00	
Weir, McKechney & Co., (Sec. F, Nov. 16, 1895).....	4,904 37		
Gahan & Byrne, (Sec. G, Nov. 16, 1895)..	5,436 55	7,831 60	
Gahan & Byrne, (Sec. H, Nov. 16, 1895)..	7,766 78	7,167 64	
Christie & Lowe, (Sec. K, Nov. 16, 1895)..	8,378 13	975 00	
The Heidenreich Company, (Sec. L, Nov. 16, 1895).....	1,251 27	246 25	
The Heidenreich Company, (Sec. M, Nov. 16, 1895).....	4,296 87	961 31	
Hayes Bros., et al. (Sec. N, Nov. 16, 1895)	1,885 71	2,776 10	
McMahon & Montgomery Co. et al. (Sec. O, Nov. 16, 1895).....	2,254 43	2,329 37	
Mason, Hoge & Co. (Sec. 6, Extra special work—Retaining embankment, repairing and raising levee, Nov. 16, 1895).....	1,775 00		
H. Sheeler, (Sec. 8, Extra work—Moving 2d cableway across Santa Fe tracks, Nov. 18, 1895— <i>final</i>).....	1,392 15		
E. D. Smith & Co. (Sec. 10, Extra work—Stairway on Sec. 10, Nov. 19, 1895— <i>final</i>).....	59 35		
The Marsh & Bingham Company, (Sec. O, Extra work—Temporary bridge and roadway at Western avenue and Boulevard, Nov. 5, 1895).....	392 94		
Chicago Bridge and Iron Company, (Sec. O, Extra work—Temporary bridge and roadway at Western avenue and Boulevard, Nov. 6, 1895).....	266 00		
T. A. Kearns, (Sec. O, Extra work—Temporary bridge and roadway at Western avenue and Boulevard, Nov. 19, 1895).....	253 44		
Hayes Bros. (Sec. O, Extra work—Temporary bridge and roadway at Western avenue and Boulevard, Nov. 12, 1895).....	616 31		
Total.....		\$153,816 56	

GENERAL ACCOUNT.

John F. Higgins, (printing Proceedings, November, 1895).....	\$ 157 46
The <i>Engineering Record</i> (advertising Regulating Works).....	104 00
	<u>\$ 261 46</u>

POLICE DEPARTMENT.

Gerstenberg & Kroeschell, (oats).....	\$ 295 98
John Larney, (hay).....	117 22
John Larney, (feed, etc.).....	45 95
Daniel E. Tracy, (horse shoeing).....	25 50
Henry Fittge, (hardware sundries).....	12 65
	<u>\$ 497 25</u>
Grand total.....	<u>\$154 575 27</u>

Mr. Kelly, seconded by Mr. Boldenweck, moved that the vouchers as read and shown above, be approved and ordered paid by warrants drawn against the current funds of the District.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Carter, Eckhart, Jones, Kelly, Mallette and Wenter—seven (7). Excused and not voting—Messrs. Braden and Smyth—two (2). Nays—None.

Upon which result the President declared the motion carried, and the vouchers as read and shown above, approved and ordered paid by warrants drawn against the current funds of the District.

MONTHLY REPORT FROM TREASURY DEPARTMENT.

The Clerk presented a report from the Treasury Department for the month of November, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"Balance on hand at date of last report.....	\$1,127,270.89
Received from County Treasurer, Sanitary District Tax Account. \$50,000.00	
Received from Thos. F. Judge, Clerk, General Account, as follows: For use of District Tel- ephone Line—Gahan & Byrne, \$200; E. D. Smith & Co., \$100; West- ern Dredging and Im- provement Co., \$100; Griffiths & McDermott, \$100; McArthur Bros.,	

\$200; Gilman & Co., \$100; Ingersoll—Ser- geant Drill Co., \$50; Crerar, Adams & Co., \$50; Franklin Mac- Veagh & Co., \$50.....	\$ 950.00
Rent of Buildings— Western Dredging & Improvement Co., \$150; McArthur Bros., \$150; Heldmaier & Neu, \$107.50.....	407.50
Sale of four histories, A. C. McClurg & Co....	8.00
Received from Ft. Dear- born National Bank, interest for November	371.51
Received from Metro- politan National Bank, interest for November	376.10
Received from Chicago National Bank, inter- est for November.....	350.31
Received from Globe National Bank, inter- est for November.....	338.88
Received from National Bank of Illinois, inter- est for November. ...	352.49
Received from Ameri- can Trust and Savings Bank, interest for November	34.51
	<u>\$ 53,189.30</u>
Total cash received for month.....	\$1,180,460 19
Total cash disbursed during month as per annexed schedules, viz:	
Clerical Department....	\$ 908.92
Treasury Department..	166.67
Engineering Departm't.	17,317.34
Police Department.....	4,502.31
Law Department.....	2,210.10

Law Department—Land	
Account.....	\$ 20,000.00
General Account.....	6,808.92
	<u>\$ 51,914.26</u>

Balance this date, in	
banks as per schedule	
endorsed hereon	<u>*\$1,128,545.93</u>

*Of the \$1,128,545.93 on hand, \$855,000.00 is the balance of the appropriation of \$1,000,000.00 made by ordinance of October 9, 1895, for the payment of District bonds and interest, leaving the net available cash balance this date..... \$273,545.93

(Signed) MELVILLE E. STONE,
Treasurer.

CHICAGO, November 30, 1895."

SCHEDULE :

Fort Dearborn National Bank.....	\$226,122.08
Metropolitan National Bank.....	228,559.95
Chicago National Bank.....	225,638.08
Globe National Bank.....	199,959.42
National Bank of Illinois.....	226,962.61
American Trust and Savings Bank.....	21,003.79

Total..... \$1,128,545.93

RESIGNATION OF CLERK.

The Clerk presented the resignation of Mr. Thomas F. Judge, as Clerk of the District; and the same was read.

Mr. Boldenweck, seconded by Mr. Mallette, moved that the resignation of Mr. Thomas F. Judge as Clerk of the District, just presented, be accepted, to take effect January 1, 1896.

Mr. Smyth, seconded by Mr. Kelly, moved that the motion of Mr. Boldenweck be laid on the table.

On roll-call on the motion to lay on the table, the vote stood: Yeas—Messrs. Jones, Kelly, Smyth and Wenter—four (4). Nays—Messrs. Boldenweck, Braden, Carter, Eckhart and Mallette—five (5).

Upon which result the President declared the motion to lay on the table lost.

On roll-call on the original motion of Mr. Boldenweck, the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart and Mallette—five (5). Nays—Messrs. Jones, Kelly, Smyth and Wenter—four (4).

Upon which result the President declared the motion carried, and the resignation of Mr. Thomas F. Judge, as Clerk

of the District accepted, to take effect January 1, 1896.

The following is

THE RESIGNATION:

"CHICAGO, Dec. 4, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I hereby tender my resignation of the office as Clerk of the Sanitary District of Chicago.

Respectfully submitted,
(Signed) THOS. F. JUDGE."

RESIGNATION OF ATTORNEY..

The Clerk presented the resignation of Mr. George E. Dawson, as Attorney of the District; and the same was read.

Mr. Mallette, seconded by Mr. Braden, moved that the resignation of Mr. George E. Dawson as Attorney of the District, just presented, be accepted, to take effect January 1, 1896.

Mr. Kelly, seconded by Mr. Wenter, moved that the motion of Mr. Mallette be laid on the table.

On roll-call on the motion to lay on the table, the vote stood: Yeas—Messrs. Jones, Kelly, Smyth and Wenter—four (4). Nays—Messrs. Boldenweck, Braden, Carter, Eckhart and Mallette—five (5).

Upon which result the President declared the motion to lay on the table lost.

On roll-call on the original motion of Mr. Mallette, the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart and Mallette—five (5). Nays—Messrs. Jones, Kelly, Smyth and Wenter—four (4).

Upon which result the President declared the motion carried, and the resignation of Mr. George E. Dawson, as Attorney of the District, accepted, to take effect January 1, 1896.

The following is

THE RESIGNATION:

"December 4, 1895.

To the Honorable the Board of Trustees, of the Sanitary District:

GENTLEMEN—I hereby tender my resignation as Attorney of the Sanitary District.

Very respectfully,
(Signed) GEO. E. DAWSON."

ELECTION OF CLERK OF DISTRICT.

Mr. Carter, seconded by Mr. Mallette, nominated Mr. James Reddick for the office of Clerk of the District, to succeed Mr. Thomas F. Judge.

Mr. Wenter, seconded by Mr. Kelly, nominated Mr. Thomas F. Judge for the office of Clerk of the District, to succeed himself.

On roll-call the vote stood:

For Mr. Reddick—Messrs. Boldenweck, Braden, Carter, Eckhart and Mallette—five (5) votes.

For Mr. Judge—Messrs. Jones, Kelly, Smyth and Wenter—four (4) votes.

Upon which result the President declared Mr. James Reddick duly elected Clerk of the District, to succeed Mr. Thomas F. Judge.

ELECTION OF TREASURER OF DISTRICT.

Mr. Mallette, seconded by Mr. Boldenweck, nominated Mr. Melville E. Stone for the office of Treasurer of the District, to succeed himself.

Mr. Smyth, seconded by Mr. Kelly, nominated Mr. Stephen W. Rawson for the office of Treasurer of the District, to succeed Mr. Melville E. Stone.

On roll-call the vote stood:

For Mr. Stone—Messrs. Boldenweck, Braden, Carter, Eckhart and Mallette—five (5).

For Mr. Rawson—Messrs. Jones, Kelly, Smyth and Wenter—four (4).

Upon which result the President declared Mr. Melville E. Stone duly elected Treasurer of the District to succeed himself.

ELECTION OF ATTORNEY OF DISTRICT.

Mr. Boldenweck, seconded by Mr. Mallette, nominated Mr. Charles S. Deneen for the office of Attorney of the District, to succeed Mr. George E. Dawson.

Mr. Kelly, seconded by Mr. Jones, nominated Mr. George E. Dawson for the office of Attorney of the District, to succeed himself.

On roll-call the vote stood:

For Mr. Deneen—Messrs. Boldenweck, Braden, Carter, Eckhart and Mallette—five (5) votes.

For Mr. Dawson—Messrs. Jones, Kelly, Smyth and Wenter—four (4) votes.

Upon which result the President declared Mr. Charles S. Deneen duly elected Attorney of the District, to succeed Mr. George E. Dawson.

ADJOURNMENT.

On motion of Mr. Boldenweck, seconded by Mr. Carter, the Board then adjourned.

THOS. F. JUDGE,
Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

DECEMBER 11, 1895.

OFFICIAL RECORD.

*Published by authority of the Board of Trustees of
the Sanitary District of Chicago).*

REGULAR MEETING.

The two hundred and ninety-third regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, December 11, 1895, at 2:00 o'clock P. M.

President Eckhart called the Board to order.

On roll-call Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette and Wenter—eight (8), and subsequently Mr. Smyth, making a total of nine (9) members were present.

MINUTES.

The minutes of the sixth annual meeting, held December 3, 1895, and of the regular meeting held December 4, 1895,

were approved as printed, on motion of Mr. Boldenweck, seconded by Mr. Braden.

ANNUAL MESSAGE OF PRESIDENT
ECKHART.

President Eckhart then presented and read his Annual Message, and, by unanimous consent, the same was ordered printed and placed on file, on motion of Mr. Kelly, seconded by Mr. Boldenweck.

The following is

THE MESSAGE:

“CHICAGO, Dec. 11th, 1895.

*To the Honorable the Board of Trustees of
the Sanitary District of Chicago:*

GENTLEMEN—In accepting the position of presiding officer of your Honorable Body, for which by your indulgence I was chosen at our annual meeting, I then promised at the earliest convenient opportunity to present to you, more at length, my view of the work that is to engage the attention of the new Board of Trustees.

From the address of the retiring President, you have become fully informed as to what progress has been made in the work for which this District was organized and of its present condition. You have learned that over seventy-five (75%) per cent of the work of excavation on the Main Channel has been finished. It remains for me to go a little more into detail as to what now confronts us, entering as we are upon our terms of office as Trustees for the people of this important enterprise.

I assume that we all appreciate the serious nature of the trust imposed upon us; that we recognize that we are here to transact the business of the people, and that no considerations of friendship or personal interests will have any weight in preventing the unprejudiced exercise of our best judgment in the decision of the grave questions which shall demand our attention.

The aggregate of expenditure called for by the existing contracts of the District, based on the latest revised estimates, amounts to \$19,080,846.31. Of this amount there has already been paid for work performed the sum of \$12,518,927.82, leaving a balance of \$6,561,918.49 to be paid out during the year 1896, provided the contracts are completed within the time required.

The District can reasonably expect to obtain upon the tax levies of 1895, 1896 and 1897, \$3,500,000 each year. We have already anticipated the tax levy of 1895 to the amount of \$981,379.31.

This leaves available from	
that year's taxes.....	\$2,518,620 69
By the first of February next	
an issue of bonds may be	
made to the amount of...	1,000,000 00

Making a total available	
fund of.....	<u>\$3,518,620 69</u>

By August 1st, 1896, there will be due on completed contracts, \$2,137,949.31, so that when the contracts then completed are settled for there will remain, to apply on the rest of the contracts and to expenses of administration, \$1,380,671.38. Taking out the latter, not more than \$1,000,000 can be relied on to apply on the remaining contracts.

By September 1st, 1896, warrants may again be issued against the tax levy of 1896 to the amount of \$3,500,000. This will make an aggregate of \$4,500,000 to apply on the remainder of the contracts, the time for the completion of which is December 1st, 1896. Since the total

amount due on these will be \$4,423,969.18, it will be seen that the margin is small; hence, it will require the most careful husbanding of the resources of the District to meet these obligations.

For the collateral work which will have to be undertaken by the District in connection with the Main Channel, and to which I will later direct your attention, we shall have to rely upon the tax levy of 1897 or such other resources as may hereafter be provided.

The completion of the excavation of the Main Channel, however, by no means furnishes the relief sought for in the organization of the District. It is true that it constitutes the greater part of the work measured by cost, but some of the most difficult problems, by reason of their demanding for their solution careful consideration, dispassionate discussion and unbiased conclusions, are yet before us.

On account of the large volume of water which the Sanitary District Act prescribes, it was early recognized that efficient means would have to be taken for controlling its flow, so that in times of flood in the Desplaines River the amount added by our Channel could be regulated. Accordingly the Engineer, after a careful study of the most important works of this nature in different parts of the United States, perfected plans for Regulating Works at the end of the Main Channel, which were approved by the Board of Trustees, proposals invited and bids received and opened. The letting of the contract for this work will be one of the first important duties of this Board.

After the water from the controlling works unites with the waters of the Desplaines River, provision must be made for carrying the combined waters past the Wire Mills at Lockport upon the route heretofore adopted by the Board, discharging same again below the Wire Mills.

In close connection with these two projects is the enlargement of the Channel of the Desplaines through Joliet, from the Upper Basin to Hickory Creek, and the maintenance of the Illinois and Michigan Canal between those points in connection therewith. This is one of the most serious questions yet to be determined and involves a considerable expenditure of money.

The work thus far spoken of is all in the line of providing a Main Channel with such works connected therewith that it may receive and take care of the prescribed amount of water. The fur-

nishing of the water itself is no less important. An immediate supply of 800,000 cubic feet per minute must be provided for. A careful survey and estimate made by our Engineers show that this amount may be brought through the Chicago River with safety by deepening the Channel and widening same at certain points or providing by-passes.

In this connection it would be wise to consider whether a portion of the cost of this improvement of the Chicago River ought not to be borne by the General Government. It is well known that the Chicago River has long since ceased to meet the demands of lake navigation. There is but fourteen (14) feet of water over the La Salle street tunnel. Large vessels are compelled to take on only a portion of their cargoes south of that tunnel, taking on the remainder at the mouth of the river.

The General Government has undertaken the deepening of the connecting channels between the Great Lakes to a depth of eighteen (18) and twenty (20) feet. The trend of modern vessel building is toward vessels of large tonnage and greater draft. Chicago shipping interests are becoming alarmed at a state of affairs in the Chicago River which has already tended in the direction of driving from our harbor vessels of greater draft. I am informed by our Attorney that when a few years ago the city attempted to improve the river by laying a special assessment upon adjoining property, our Supreme Court sustained objections to the assessment on the ground that the river was a public navigable stream, and its improvement for purposes of navigation was a matter of general public interest. The following language was used: "The river is a navigable stream of the United States; it connects with Lake Michigan, and by means of the lake with the country at large; the Federal Government has assumed jurisdiction over it, and expended money, as appears from the admitted facts, for its improvement; it is one of the channels over which the commerce of the country passes, and this improvement was instituted for the purpose of increasing its power as one of the navigable streams of the country. It was undertaken in the interest of the commerce of the country."

The position here taken cannot be gainsaid. A large portion of the improvements in that river which will be necessary for the purposes of this District ought to be undertaken by the General Government in the interests of

navigation alone were no Sanitary District in existence.

The importance of Chicago as a lake port is well understood by our business men. Its total tonnage for 1894 was 10,392,420 tons, while that of Cleveland was 9,616,990 and of Buffalo 8,810,053 tons. The vessels engaged in this traffic are in large part owned by citizens of Toledo, Cleveland, Buffalo and other lake cities. The benefits and advantages, therefore, of a safe harbor and water of adequate depth in the river channel accrue not alone nor mainly to Chicago, but, as has been said by the learned Judge in the opinion referred to, these facilities are "in the interest of the commerce of the country."

Notwithstanding the importance of Chicago to the shipping interests of the entire lake region the appropriations for harbor and river purposes have been comparatively small, and they have been expended in improvements mainly confined to the harbor and the mouth of the river, no work having been undertaken west of the Rush street bridge. If the appropriations made by the General Government for other less important ports be compared with those allotted to Chicago the comparison will be to the disadvantage of our city. These appropriations for the years 1888, 1890 and 1892 were \$200,000, \$100,000 and \$72,000, respectively. Those for Buffalo for the same years were \$225,000, \$300,000 and \$300,000, more than twice as much. For Duluth the aggregate for the three years was \$305,000, almost equal to that of Chicago. For the year 1892, outside of the much larger appropriations for such ports as Buffalo and Cleveland, even such harbors as Grand Haven, Muskegon, Milwaukee Bay and Marquette received appropriations in excess of that for Chicago and such small havens as Ashtabula and Superior Bay each received \$70,000, being within \$2,000 of the amount devoted to the port of Chicago.

The burden thus thrown on Chicago of making in great part her own improvements is unfair, in view of the fact that the Chicago River is a navigable stream of the United States; that the Federal Government has assumed jurisdiction over it and has declared it unlawful to excavate or fill or in any manner to alter or modify its course, location, condition or capacity until the plans for the proposed work have been submitted to the Secretary of War and have been by him approved.

The policy of the General Government

toward this harbor and the improvement of the Chicago River ought to be changed, and we should do what we can in that direction.

I therefore earnestly direct your attention to the urgency of taking immediate steps to see that the matter is put before Congress in a proper manner, so that such portion of the work as is of a national character may be borne by the Government. This work will fall especially to the charge of the Committee on Federal Relations.

Although satisfactory agreements have been reached with the three railway companies having tracks at Campbell avenue for the cutting of the Main Channel across their tracks, there are several railroad crossings yet to be provided for. The Chicago, Madison & Northern; the Chicago & Western Indiana Belt Railway, and the Chicago, Santa Fe & California Railways are all in the line of our Channel, and crossings must be arranged. The latter railway crosses the Channel no less than three times between this city and Lemont, and has rights of way for two other crossings.

A comprehensive solution of the problem of these crossings in such manner as to limit them to one, and thus do away with several bridges, is greatly to be desired.

Now that the plan for the reorganization of the Santa Fe seems certain to be successfully carried out, the negotiations already begun may no doubt be resumed at an early day.

Closely connected with the railway question, and a part of its solution, is the subject of bridges. These will have to be provided, not only at railway crossings, but also for streets and public highways which cross the Channel.

The only work before you yet remaining to be mentioned, which involves the expenditure of large sums of money, is the cleansing of the North Branch of the Chicago River and the South Fork of the South Branch. The condition of these streams is well known to you all. It has been a standing menace to the health and lives of those living in those quarters of the city. Not only that, but they are the chief sources of the pollution of our drinking water, for at times of heavy rains there is of necessity some current setting in towards the lake, and the accumulated filth is poured out of the mouth of the river to be carried by favorable currents or by slow permeation in the direction of the water intakes.

This problem deserves your most careful and deliberate consideration.

The work of excavation on more than one-third of the sections of the Main Channel is completed, and work thereon has ceased, except the keeping of same free from water. The contract time for the completion of these sections expires May 1, 1896. A large number of other sections will be finished at that time, and during the two months following, so that by August 1, 1896, over two-thirds of the sections will be completed, and the contractors will no doubt be expecting payment therefor, including the retained percentages. By the 1st of December thereafter the remaining sections will be finished.

I mention these matters because the question of the closing of contracts and of providing the means of payment therefor must soon receive your attention.

The people of Chicago now look with pride upon the great undertaking in which the District is engaged. There is no longer any doubt in their minds as to its successful completion. They are impatient to reap the benefits which it will bring, and will not easily forgive any mistakes or unnecessary procrastination on the part of their servants.

The law provides for the examination of the completed work by a Commission appointed by the Governor to determine whether it complies with the requirements of the Sanitary District Act.

To carry forward the work yet to be done, which I have briefly outlined, will require close and unremitting attention from every Trustee of the District to have it finished and the work ready for inspection by the summer of 1897. To that end we must bend every energy.

You have already had pointed out to you the possibility of the creation of a great water power between the end of our Channel and Joliet Lake.

While the development of such power is a matter for the future, and we should not at this time be justified in the expenditure of money for that purpose, still, every care must be taken not to prejudice the situation so that when the time comes and the demand for the use of such power calls it into existence no obstacles will be in the way on account of any present work which might just as well have been otherwise carried out.

It had not been my intention to take up so much of your time. I have as briefly as possible touched upon the vari-

ous matters which will at once engage your attention. I have not mentioned the many and constant matters of detail which will be pressing themselves upon you in your work in the various committees. We have before us, gentlemen, no light task. We must expect calls to attend meetings of committees at times which will seriously incommode and delay private business, but I am sure that you all feel disposed to give to these matters of trust the immediate attention they deserve and will allow them to take precedence of personal affairs.

One word more. A wise economy in the business of the District is not merely desirable, it is a necessity. Happily the maximum of expenditure for the work of excavation on the Main Channel has been passed. By the first of the year that portion of the Channel between Lemont and Section fifteen (15) at Lockport will be completed, making a continuous cut of about seven miles. There will also be four consecutive miles just beyond the city limits. It will be possible to cut down the police force and to curtail somewhat the number of men in the Engineering Department on special work. Whatever can be done in this direction without endangering the interests of the District should be done.

And now, in conclusion, I deem it proper to say a word in regard to the

spirit with which this work should, in my opinion, be taken up by this Board of Trustees. It cannot be too often nor too strongly emphasized that we are occupying positions of trust. We have a great work to perform. We have an efficient and trained engineering corps and other employes familiar with the duties of their positions. Many of us are not familiar with the work of the Sanitary District, with what has been done and with what there is to do. None of us can gain too great a familiarity with what is before us. Let us devote ourselves to the study of the business which lies before us and to the solution of the questions which I have shown are pressing upon our attention from every direction. The appointments upon the various Committees I have endeavored to make with a view of giving each Trustee his full share of the burden and responsibility of this work. I trust, gentlemen, that we have all reached the serious and deliberate conclusion that this work must be done in an efficient, honest and economical manner at all hazards and that personal interests and private ambitions shall find here no field in which to operate.

Respectfully submitted,

(Signed)

B. A. ECKHART,

President."

VOUCHERS.

The Clerk presented the following vouchers:

ENGINEERING DEPARTMENT.

F. Mayer & Co. (blue printing).....	\$ 18 07
Eugene Dietzgen Co. (drafting supplies)	8 36
Chicago Edison Co. (lamp globes).....	1 20
Chicago Towel Supply Co. (towelings)...	5 40
Waukesha Hygeia Mineral Springs Co. (water).....	7 50
C. S. Austin, (ice).....	12 00
J. M. Abbitt, (coal, etc.).....	61 63
Frank S. Amick, Agent, (rent—Corwith, November, 1895).....	15 00
John McCaffery, (rent—Brighton Park, November, 1895).....	25 00
J. M. Abbitt, (rent—Willow Springs, November, 1895).....	20 00
H. S. Norton, (rent—Lemont, November, 1895).....	18 00
O. W. Moon, (rent—Lockport, November, 1895).....	20 00
Joseph Carlin, (gauge reading, Novem- ber, 1895).....	10 00
E. Hastings, (gauge reading, November, 1895).....	10 00

Wm. Kirkham, (gauge reading, November, 1895).....	\$ 10 00	
Wm. McGinnis, (gauge reading, November, 1895).....	10 00	
Mary Rusk, (gauge reading, November, 1895).....	10 00	
Isham Randolph, (traveling expense)...	18 00	
E. R. Shnable, (traveling expense).....	31 26	
H. B. Alexander, (traveling expense)....	12 97	
Chas. L. Harrison, (traveling expense)...	42 25	
Chas. L. Harrison, (traveling expense)...	22 65	
W. T. Keating, (traveling expense).....	19 55	
Wm. Trinkaus, (expense).....	20 81	
		\$ 429 68

CLERICAL DEPARTMENT.

Warner's Towel Supply, (toweling).....	\$ 2 00	
C. S. Austin, (ice).....	3 00	
		\$ 5 00

GENERAL ACCOUNT.

The Chicago Evening Post Co. (advertising Regulating Works).....	\$ 16 80	
Total.....	\$ 451 48	

ENGINEERING DEPARTMENT.

CLAUSE "J"

		Total Retained.	Amount released on this Voucher.
<i>*Construction Account—</i>			
Griffiths & McDermott, (Sec. 1, Nov. 30, 1895).....	\$14,426 60	\$13,208 83	\$ 430 84
McArthur Brothers, (Sec. 2, Nov. 30, 1895)	5,127 50		
Gilman & Company, (Sec. 3, Nov. 30, 1895)	11,637 50		
McArthur Brothers, (Sec. 4, Nov. 30, 1895)	2,870 00		
The Qualey Construction Co., (Sec. 5, Nov. 30, 1895).....	5,675 25		
Mason, Hoge & Company, (Sec. 6, Nov. 30, 1895).....	12,097 31		
Mason, Hoge & Company, (Sec. 7, Nov. 30, 1895).....	9,968 44		
Mason, Hoge, King & Co., (Sec. 8, Nov. 30, 1895).....	12,023 38		
Mason, Hoge & Company, (Sec. 11, Nov. 30, 1895).....	9,292 06		
Mason, Hoge & Company, (Sec. 12, Nov. 30, 1895).....	6,874 13		
Mason, Hoge & Company, (Sec. 13, Nov. 30, 1895).....	1,991 72		
Smith & Eastman, (Sec. 14, Nov. 30, 1895)	12,654 25		
Wright, Meysenburg, Sinclair & Carry, (Sec. 15, Nov. 30, 1895).....	7,775 25		
Heldmaier & Neu, (Sec. A, Nov. 30, 1895)	5,088 73	25,775 84	483 57
Heldmaier & Neu, (Sec. B, Nov. 30, 1895)	12,455 81		8,308 17
Western Dredging & Improvement Co., (Sec. C, Nov. 30, 1895).....	3,598 44		
E. D. Smith & Co., (Sec. D, Nov. 30, 1895)	4,302 70		
Angus & Gindele, (Sec. E, Nov. 30, 1895)	1,630 12	7,020 00	
Weir, McKechney & Co., (Sec. F, Nov. 30, 1895).....	2,865 19		

*Paid by warrants, with interest coupons attached, drawn against the tax levy of 1895.

		CLAUSE "J"	
		Total Retained.	Amount released on this Voucher.
Gahan & Byrne, (Sec. G, Nov. 30, 1895)..	\$ 4,901 71	\$7,288 96	\$ 542 64
Gahan & Byrne, (Sec. H, Nov. 30, 1895)..	7,024 56	7,287 49	
Christie & Lowe, (Sec. K, Nov. 30, 1895)..	4,832 37	375 00	600 00
The Heidenreich Company, (Sec. M, Nov. 30, 1895).....	3,598 13	141 05	820 00
Hayes Bros., et al. (Sec. N, Nov. 16, 1895)	1,573 77	3,215 40	
McMahon & Montgomery Co. et al. (Sec. O, Nov. 30, 1895).....	5,038 61	2,205 47	123 90
Mason, Hoge & Co. (Sec. 6, Extra special work—Retaining embankment, repairing and raising levee, Nov. 30, 1895).....	225 00		
†Mason, Hoge & Co. (Sec. 7, Extra work—Dimension stone, rip-rap work, earth core and embankment, Nov. 30, 1895).....	1,448 00		
Mason, Hoge & Co. (Extra work—Repairing and raising levee to grade, Nov. 30, 1895— <i>Final</i>).....	1,000 00		
Total.....		*\$171,998 53	
Grand total.....		\$172 450 01	

†Referred to Joint Committee on Engineering and Finance.

Mr. Wenter, seconded by Mr. Jones, moved that the rules be suspended for the purpose of approving the vouchers, as read and shown above, the same not having been signed by the Committees on Finance and Engineering.

The motion prevailed unanimously, and it was so ordered.

Mr. Boldenweck, seconded by Mr. Mallette, moved that the construction voucher in favor of Mason, Hoge & Co., for extra work on Section 7, for \$1,448.00, be referred to the Joint Committee on Engineering and Finance.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Kelly and Mallette—five (5). Nays—Messrs. Eckhart, Jones, Smyth and Wenter—four (4).

Upon which result the President declared the motion carried and the construction voucher in favor of Mason, Hoge & Co., for extra work on Section 7, for \$1,488.00, so referred.

Mr. Kelly, seconded by Mr. Wenter, moved that the vouchers, as read and shown above, (excepting that in favor of Mason, Hoge & Co. for \$1,448.00 just referred) be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, (*except as to vouchers for Joseph Carlin, E. Hastings, Wm. Kirkham, Wm. McGinnis and Mary Rusk, \$10.00 each, for gauge reading*), Mallette, Smyth and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, and the vouchers, as read and shown above, (excepting that in favor of Mason, Hoge & Co. for \$1,448.00 just referred) approved and ordered paid.

AUTHORIZATION OF ADDITIONAL EXPENDITURE FOR APPROACH TO TEMPORARY BRIDGE TRETTLE AT ROMEO ROADWAY.

The Clerk presented a report from the Chief Engineer, asking the approval and authorization of the payment of \$6.12 additional to the appropriation made at the meeting held October 16, 1895 (page 2879 of the Proceedings), for work on the approach to the temporary bridge trestle at Romeo Roadway crossing, as set forth in the report; and the report was read.

Mr. Kelly, seconded by Mr. Boldenweck, moved that the report be ordered printed and placed on file, and payment of the additional expenditure as set forth therein, authorized.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, the report ordered printed and placed on file, and payment of the additional expenditure as set forth therein, authorized.

The following is

THE REPORT:

“CHICAGO, Dec 6, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—On October 16th (page 2879 of Proceedings), you authorized additional work on the approach to the Romeo bridge, to the extent of \$50. This work is completed, and has exceeded my estimate by \$6.12. I therefore ask that you authorize the payment of this additional amount, making the total bill \$56.12, for which voucher has been prepared.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer.”

MOVING OF TRESTDLE ON SECTION 1, WESTERN STONE CO. TRACK BACK TO SECTION 10, AND STAIRWAY ON SECTION 10.

The Clerk presented a report from the Chief Engineer, requesting authorization of the payment of certain expenditures for the moving of trestle on Section 1, Western Stone Co. track back to Section 10 and stairway on Section 10, as set forth in the report; and the report was read.

Mr. Boldenweck, seconded by Mr. Smyth, moved that the report be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the report was ordered printed and so referred.

The following is

THE REPORT:

“CHICAGO, Dec. 10, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have prepared vouchers for the following bills for which I do not have your authorization:

The first of these is the bill of Griffiths & McDermott for removing trestle

to admit the passage of the hydraulic dredge from the Main Channel to the River Diversion and return, and replacing the trestle after the dredge work was done. This I explained to the Committee on Engineering and Finance. Amount of bill, \$220.60.

Bill of the Western Stone Company for changing their tracks back to the proper line when the trestle was moved from the west end of Section 9 to the east end of Section 10, as heretofore explained. Amount of bill, \$196.86.

Bill of E. D. Smith & Co. for moving stairway from the site of their wagon bridge across the Channel on Section 10 to the east end of the section adjacent to the bridge of the Western Stone Company. Amount of bill, \$27.33.

I ask that these payments be authorized.

Respectfully submitted,
(Signed) ISHAM RANDOLPH,
Chief Engineer.”

EMERGENCY WORK ON ACCOUNT OF FIRE IN LEVEES ON SECTIONS 6 AND 7, AND CONDITION OF RIVER DIVERSION LEVEES.

The Clerk presented a report from the Chief Engineer, asking authority for payment of \$1,155.13 for special force employed on account of fire in the levees on Sections 6 and 7, and also requesting early action with reference to report on condition of River Diversion levees, presented and referred to the Joint Committee on Engineering and Finance at the meeting held November 13, 1895 (page 2918 of the proceedings); and the report was read.

Mr. Kelly, seconded by Mr. Smyth, moved that the report be ordered printed and referred to the Joint Committee on Engineering and Finance.

The motion prevailed unanimously, and the report was ordered printed and so referred.

The following is

THE REPORT:

“CHICAGO, Dec. 6, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In my report of November 13th (page 2918 of Proceedings), I called attention to the fact that I had employed a special force to fight the fire which had attacked the levees on Sec-

tions 6 and 7. In that report I only stated the circumstances under which this force was employed, asking authorities to pay for the services rendered. The bills for this service are now in, amounting on the two sections to \$1,155.13. I therefore ask authority to vouch for the same for payment.

In this connection, I would say that the appropriation of \$1,000 for raising the grade of levee on Section 7 is entirely expended, and considerable work remains to be done. I would therefore ask that you take some action on my report of the 13th ult. above referred to, which would enable me to complete this work.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer."

MONTHLY REPORT FROM LAW DEPARTMENT.

The Clerk presented a report from the Law Department for the month of November, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

"CHICAGO, December 11th, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I submit herewith the monthly report for November, 1895.

The total amount paid out by this Department during the month is as follows:

SALARIES.

Attorneys.....	\$ 1,366 67
Office force.....	255 00
	—————\$ 1,621 67

GENERAL EXPENSES.

Court costs.	\$ 213 45
Right of way.....	425 00
Expense account...	58 38
Printing and stationery	6 00
	—————\$ 702 83
Total.....	<u>\$2,324 50</u>

The agreements for the crossing by our Main Channel of the right of way of the Chicago and Northern Pacific and of the Union Stock Yard and Transit Company Railways, to which I referred in my last report, have been concluded, and

same have been executed by the parties thereto.

Contracts have been prepared by this Department for the building of retaining walls on Section fifteen (15), for the excavation of stone on Section D, and for the extensions of time for the completion of various contracts, where such extensions have been asked for and granted.

The Department will be occupied during the month in closing so far as possible unfinished matters, in preparing the annual report, and in routine work.

Respectfully submitted,

(Signed) GEO. E. DAWSON,
Attorney."

ADDITIONAL CREDITORS' CLAIMS AGAINST THE HEIDENREICH COMPANY.

The Clerk presented a communication from Walter W. Ross, attorney for certain creditors of The Heidenreich Company, contractors for Sections L and M, accompanied by statements and affidavits, additional to those presented and referred to the Joint Committee on Judiciary and Finance at the meeting held October 16, 1895 (page 2889 of the Proceedings).

Mr. Boldenweck, seconded by Mr. Kelly, moved that the communication and enclosures be referred to the Joint Committee on Judiciary and Finance without reading.

The motion prevailed unanimously, and the communication and enclosures were so referred.

CLAIM OF THOS. KRIBELL FOR WORK ON SECTION E.

The Clerk presented a communication from Thomas Kribell, being claim for certain work said to have been done for Angus & Gindele, contractors on Section E of the Main Channel, as set forth in the communication.

Mr. Kelly, seconded by Mr. Boldenweck, moved that the communication be referred to the Joint Committee on Judiciary and Finance without reading.

The motion prevailed unanimously, and the communication was so referred.

AGREEMENT FOR PURCHASE OF TAX LEVY WARRANTS.

Mr. Wenter presented an order, accompanied by agreement, in duplicate, with the Illinois Trust and Savings Bank, for the purchase of certain war-

rants of the District (with 6 per cent interest coupons attached) drawn against the tax levy of 1895, as provided in the agreement; said order approving said agreement and authorizing and directing the President and Clerk to execute the same on behalf of the District, and providing for the payment of contractors' estimates by said tax levy warrants; and the order and accompanying agreement were read.

Mr. Wenter, seconded by Mr. Boldenweck, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, the order adopted, the accompanying agreement approved, and the President and Clerk authorized and directed to execute the same on behalf of the District, all as provided in the order.

The following is

THE ORDER, WITH ACCOMPANYING AGREEMENT:

“Ordered, That the agreement, transmitted herewith in duplicate, between this District and the Illinois Trust and Savings Bank, prepared by the Attorney, and bearing date the 11th day of December, A. D. 1895, for the purchase by it from contractors of warrants of the District, drawn against the tax levy of the year 1895, and issued to said contractors in payment for material furnished and work done for the corporate purposes of the District, be and the same is hereby approved; that the President and Clerk are hereby directed to execute said agreement on the part of the District, and that in lieu of warrants drawn by the Clerk upon the Treasurer for the payment of contractors' estimates, warrants against the tax levy of 1895, in the form proposed in said agreement, be drawn by him and delivered to contractors in payment of said estimates until the further order of the Board.”

The following is

THE AGREEMENT:

“This Agreement, made this eleventh day of December, A. D. 1895, between the Sanitary District of Chicago, a corporation organized under the laws of the State of Illinois, party of the first part, and the Illinois Trust and Savings Bank, a corporation organized under the laws

of the State of Illinois, party of the second part, *witnesseth, that*

WHEREAS, The said first party is unable to meet and defray its obligations to its contractors, and finds it necessary for the purpose of carrying out, without delay, the work for which it was organized, to issue to its contractors in payment of the amounts due them for work performed and material furnished, under and in accordance with their contracts, its warrants, payable out of the taxes levied for Sanitary District purposes, for the year 1895, when the same are collected; and,

WHEREAS, Said contractors will consent to receive said warrants in lieu of cash, to which they are entitled under their contracts only on condition that such arrangements shall be made for purchasing such warrants of them as shall protect them from any loss thereon, and shall also secure to the holder thereof interest at the rate of six per centum (6%) per annum; and,

WHEREAS, The second party hereto is willing to purchase of such contractors warrants issued by the first party hereto in the manner proposed, to the amount of one million (\$1,000,000) dollars.

Now, therefore, in consideration of the mutual and respective undertaking hereof, it is hereby covenanted and agreed by and between the parties hereto as follows:

First—Second party hereby agrees, subject to the provisions hereof, to receive and purchase for cash from said contractors warrants issued by first party to said contractors, payable out of the tax levy of 1895, at such time or times as same shall be presented to said second party by said contractors, at their par value, to equal but not, however, to exceed in the aggregate the amount of one million dollars (\$1,000,000).

Second—First party shall, and hereby agrees to, issue said warrants to said contractors for the purposes aforesaid and in the form of the blank warrant hereto attached and marked “Form of Warrant,” which is hereby made a part of this agreement, to which warrant shall be attached the agreement with the reference to the payment of interest thereon, also shown upon and made a part of said exhibit, and said first party also agrees that it will not issue warrants payable out of the tax levy of 1895, to exceed in the aggregate seventy-five per centum (75%) of the total amount of such tax levy.

Third—In consideration of the agreement of the second party hereto, to purchase from said contractors from time to time, as same are issued, such warrants of the first party to the said amount of one million dollars (\$1,000,000), and the arrangement by said second party of its funds for the purpose aforesaid, said first party hereby agrees to pay to said second party interest on the sum of one million dollars (\$1,000,000), at the rate of six per centum (6%) per annum from the date of this agreement to the time of the first purchase of warrants under the terms hereof; and interest at the rate aforesaid on the remainder of said sum of one million dollars (\$1,000,000), after deducting the amount of the warrant or warrants so first purchased, from the time of such first purchase to the time of second purchase of warrants, and so on from time to time until the final investment of such sum of one million dollars (\$1,000,000) in the warrants aforesaid, first party paying interest at the rate of six per centum (6%) per annum on the whole of such sum of one million dollars (\$1,000,000), or upon such portion thereof as remains after each successive purchase of warrants as aforesaid, as the case may be.

Fourth—Second party on its part hereby agrees to allow to first party interest at the rate of two per centum (2%) per annum on the sum of one million dollars (\$1,000,000) from the date of this agreement to the time of the first purchase of warrants by it; and interest on the amount remaining after deducting from said sum of one million dollars (\$1,000,000), the amount so first purchased, at said rate of two per centum (2%) per annum up to the time of the second purchase of warrants hereunder, and so on until the whole amount of said one million dollars (\$1,000,000) in warrants is purchased by the first party hereunder, second party allowing to first party interest at said rate of two per centum (2%) per annum on the whole of said one million dollars (\$1,000,000), or on such portion of said sum of one million dollars (\$1,000,000) as remains in its hands uninvested in warrants hereunder, between the successive purchases of warrants, as the case may be.

Fifth—It is mutually agreed that an accounting shall be had between the parties hereto on the first day of each month after the date hereof, of the amount due the second party under the third subdivision hereof, and of the amount to be credited to the first party under the fourth subdivision hereof, and

the balance due to the second party shall, as a consideration to further action by second party, at once be paid to it by the first party.

In witness whereof, the parties hereto have caused this agreement to be signed by their respective officers thereunto duly authorized, and their respective corporate seals to be hereto affixed on the day and year first above written."

(Form of tax warrant and interest coupon attached.)

The following is

THE FORM OF TAX WARRANT AND INTEREST COUPON:

"NO..... \$.....

TREASURER OF THE SANITARY DISTRICT OF CHICAGO.

CHICAGO, Ill.....189..

From the tax levy of the year 1895, appropriated and levied for the corporate purposes of said Sanitary District, when received by you, pay.....or bearer, the sum of.....dollars, being for material furnished and work done for the corporate purposes of said District.

The taxes to be collected from the Sanitary District tax levy of 1895 are specially appropriated, set apart and pledged to the payment of this and all warrants drawn against said tax levy, and the aggregate amount of said warrants does not exceed seventy-five per cent of the total amount of said tax levy. This warrant is payable solely from said taxes when collected and not otherwise, and is receivable in payment of the taxes against which it is issued.

.....
President of the Board of Trustees.

Countersigned:

.....
Clerk of the Sanitary District of Chicago.

NO.....

THE SANITARY DISTRICT OF CHICAGO

Tax Warrant Interest Coupon.

CHICAGO, Ill.....189..

The Sanitary District of Chicago will pay interest upon its Warrant No..... issued against the tax levy of 1895 at the rate of six per cent per annum from the date thereof until paid; provided, that if the Treasurer, by publication or otherwise, shall give notice that he has money in his hands from the tax levy, against which said warrant is issued, available for its payment and shall fix a date for the presentation and payment thereof, interest

thereon after the date so fixed shall not be paid.

.....
President of the Board of Trustees.

Countersigned:

.....
Clerk of the Sanitary District of Chicago."

ORDER FOR PUBLISHING OF PRESIDENT ECKHART'S MESSAGE.

Mr. Wenter, seconded by Mr. Kelly, moved that the Clerk be authorized and directed to publish in pamphlet form five hundred (500) copies of President Eckhart's Annual Message.

On roll-call the vote stood: Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, and the Clerk authorized and directed to publish in pamphlet form five hundred (500) copies of President Eckhart's Annual Message.

SUCCESSORS TO ATTORNEY AND CLERK TO BE NOTIFIED OF ELECTION.

Mr. Boldenweck, seconded by Mr. Mallette, moved that the Clerk be directed to notify the Attorney and Clerk, chosen at the meeting held December 4, 1895, (page 3011 of the Proceedings), of their election and of the bond required in their respective offices.

The motion prevailed unanimously, and the Clerk was so directed.

AMENDMENT TO RULE 20.

Mr. Carter presented in writing an amendment to Rule 20 of the Rules of the Board of Trustees, with reference to the duties of the Clerk; and the amendment was read.

Mr. Wenter, seconded by Mr. Smyth, moved that the amendment be ordered printed and referred to the Committee on Rules.

The motion prevailed unanimously, and the amendment was ordered printed and so referred.

The following is

THE AMENDMENT:

"20. The duties of the Clerk shall be to keep all the accounts, papers, books and records of the municipality, and he shall devote his time to the duties of his office. He shall attend all meetings of the Board, whether regular or called, and keep the records of the same, keep the corporate seal and affix the same to all papers which require it, and shall perform such other duties as are required by law, or by the ordinances, orders or resolutions of the Board. His salary shall be the sum of four thousand (\$4,000) dollars per annum, and his bond shall be the sum of one hundred thousand (\$100,000) dollars."

APPOINTMENT OF COMMITTEES FOR 1895-1896.

The President then announced the following Committees of the Board for the years 1895-1896:

JUDICIARY—J. P. Mallette, *Chairman*; A. J. Jones and Joseph C. Braden.

FINANCE—Frank Wenter, *Chairman*; Z. R. Carter and J. P. Mallette.

ENGINEERING—William Boldenweck, *Chairman*; J. P. Mallette, Z. R. Carter, Thomas Kelly and A. J. Jones.

HEALTH AND PUBLIC ORDER—Thomas Kelly, *Chairman*; Thomas A. Smyth and Joseph C. Braden.

FEDERAL RELATIONS—Z. R. Carter, *Chairman*; J. P. Mallette, Thomas A. Smyth, Thomas Kelly and A. J. Jones.

LABOR—Joseph C. Braden, *Chairman*; Frank Wenter and William Boldenweck.

RULES—President of the Board, *Chairman*; Thomas A. Smyth and Z. R. Carter.

ADJOURNMENT.

On motion of Mr. Boldenweck, seconded by Mr. Braden, the Board then adjourned.

THOS. F. JUDGE,
Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

DECEMBER 18, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees of
the Sanitary District of Chicago).*

REGULAR MEETING.

The two hundred and ninety-fourth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, December 18, 1895, at 2:00 o'clock P. M.

President Eckhart called the Board to order.

On roll-call Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9) members, were present.

MINUTES.

The minutes of the regular meeting held December 11, 1895, were approved as printed, on motion of Mr. Kelly, seconded by Mr. Boldenweck.

VOUCHERS.

The Clerk presented the following vouchers:

CLERICAL DEPARTMENT.

Western Bank Note and Engraving Co., (envelopes) ..	\$ 10 00
---	----------

LAW DEPARTMENT.

Edwards & Hancock, (stationery)	\$ 3 65
C. S. Austin, (ice)	3 00
Warner's Towel Supply, (toweling)	1 50
	\$ 8 15

TREASURY DEPARTMENT.

Western Bank Note and Engraving Co., (envelopes) ..	\$ 4 00
---	---------

GENERAL ACCOUNT.

Western Stone Co., (capstone of tablet, Sec. 10)	\$ 21 58
E. D. Smith Co., (platform and setting tablet, Sec. 10)	174 88
	\$196 46

POLICE DEPARTMENT.

J. G. Bodenschatz, drug sundries)	\$ 22 80
Standard Oil Co., (oil).....	30 12
	<u>\$ 52 92</u>
Grand total.....	<u>\$271 53</u>

Mr. Wenter, seconded by Mr. Mallette, moved that the vouchers as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, and the vouchers as read and shown above, approved and ordered paid.

MONTHLY REPORT FROM CLERICAL DEPARTMENT.

The Clerk presented a report from the Clerical Department for the month of November, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, December 18, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I have the honor to herewith report that the total amount expended on account of and charged to the Clerical Department during the month of November, 1895, was \$912.67, divided as follows:

Salaries	\$891 67
Stationery.....	12 25
General expenses.....	8 75
Total.....	<u>\$912 67</u>

There are no outstanding liabilities, and the expenses for the present month will, from present indications, be about \$950.

The total amount expended and charged to the General Account during the month of November, 1895, was \$4,651.11, divided as follows:

Salaries.....	\$2,803 34
Printing.....	147 97
Advertising.....	1,190 04

Expense, Memphis Deep Waterways Convention and Deep Waterways Bill.....	438 94
General expenses.....	70 82
Total.....	<u>\$4,651 11</u>

There are outstanding liabilities against the General Account to the amount of \$104.00, for advertising, and the expenses for the present month will be about \$4,000.

During the month of November, 1895, there were regular warrants authorized and drawn against the various accounts for \$30,108.99, as follows:

Engineering Department.....	\$ 17,537 32
Clerical Department.....	912 67
Law Department.....	2,324 50
Treasury Department.....	166 67
General Account.....	4,651 11
Police Department.....	4,516 72
Total.....	<u>\$ 30,108 99</u>

As directed by your Honorable Body at the meeting held October 9, 1895, all estimates issued to contractors, and audited, approved and ordered paid by the Board during the month of November, 1895, were paid in tax levy warrants, with six (6) per cent interest coupons attached, drawn against the tax levy for 1895, as follows:

Engineering Department (Construction Account), tax levy warrants.....	\$234,461 58
Which, added to the cash expenditures for the month....	<u>30,108 99</u>

Makes a total expenditure for the month of..... \$264,570 57

The total of tax levy warrants issued to December 1, 1895, has been \$981,379.31.

Of the balance of the \$1,000,000 appropriated for the payment of District Bonds and interest on bonds and tax levy warrants, there were no expenditures during November, 1895, leaving the unexpended balance of the appropriation still \$855,000.

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk.”

RETURN BY CLERK OF EMERGENCY FUNDS AND OTHER MONEYS.

The Clerk presented a report, transmitting receipt from the Treasurer for \$1,980.06, being in full of emergency

funds and other moneys in his possession as Clerk hitherto not accounted for; and the report and accompanying receipt were read.

Mr. Wenter, seconded by Mr. Kelly, moved that the report and accompanying receipt be ordered printed and referred to the Committee on Finance to report back to the Board.

The motion prevailed unanimously, and the report and accompanying receipt were ordered printed and so referred.

The following is

THE REPORT, WITH ACCOMPANYING RECEIPT:

“CHICAGO, Dec. 18, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I herewith present a statement of all moneys in my possession, hitherto not accounted for, that, under various orders of your Honorable Body, have come into my hands as Clerk during my term, and I transmit herewith a receipt from the Treasurer covering the entire amount, the same having been redeposited in the Treasury to the credit of the District and of the proper funds thereof, as shown herein.

1. Under order of the Board of August 27, 1890 (page 36 of the Proceedings), I was authorized to draw five hundred (\$500.00) dollars and charge to the Engineering Department, the same to be held as an emergency fund for the payment of employees of that department leaving the service before pay-day. On September 22, 1890, Voucher No. 185, I drew four hundred (\$400.00) dollars of this authorization, which was the only amount drawn against the same, and the receipt of the Treasurer for the same, which has been returned and redeposited to the credit of the District and the Engineering Department Account thereof, is hereto attached.

2. Under order of the Board of September 27, 1893 (page 1485 of the Proceedings), I was directed to draw an emergency fund of one thousand (\$1,000.00) dollars against the Engineering Department Construction Account, to pay employees of the Engineering Department who left the service of the District before pay-day. On September 27, 1893, Voucher No. 4288, I drew one thousand (\$1,000.00) dollars, in conformity with this order, against the Engineering Department Construction Account, and the receipt of the Treasurer

for the same, returned and redeposited to the credit of the District and the Engineering Department Construction Account thereof, is hereto attached.

3. On August 30, 1893, (pages 1427 and 1429 of the Proceedings) your Honorable Body entered into contracts for special work on the River Diversion on Section 1 with Alfred Harlev, and on Sections 2, 3 and 4 with McArthur Brothers Company, as agents. During October, November and December, 1893, said parties paid the employees of the District on said work (with fifteen—15%—per cent added for superintendence, etc.), and after settlement under the said contracts with said parties, there remained uncalled for pay envelopes to the amounts of \$215.58 and \$203.20 respectively, which were returned to me. On March 28, 1894, I received one thousand eight hundred and sixty-three and thirteen one hundredths (\$1,863.13) dollars, on Voucher No. 5392, to cover the payment of pay-rolls for special work, done under the direction of the Chief Engineer, on the break in the levee on Section E (Streeter & Kenefick, contractors), resulting from the floods of March 5, 1894. There remained after the settlement of said pay-rolls, uncalled for pay envelopes to the amount of ninety-five and twenty one hundredths (\$95.20) dollars, making a total of uncalled for pay envelopes on these works of five hundred and thirteen and ninety-eight one hundredths (\$513.93) dollars. The receipt of the Treasurer for said amount, returned and redeposited to the credit of the District and the Engineering Department Construction Account thereof, is hereto attached. Itemized statement of uncalled for pay envelopes attached hereto and marked “Exhibit A.”

4. On the following regular pay-rolls of the Engineering Department, the amounts below, aggregating sixty-six and eight one hundredths (\$66.03) dollars, have been standing to the credit of the parties named, uncalled for:

Voucher No.	Name	Amount.
181.....	F. J. McCauley.....	\$ 3 33
1965	W. H. Stewart.....	4 80
1901.....	John Joost.....	2 00
4407.....	Walter D. Reynolds...	30 33
4223.....	Thos. F. Tracy.....	2 08
5396.....	Geo. Hillick.....	1 04
5393.....	C. Cobb.....	6 00
7850.....	Larry Rooney.....	9 00
7539.....	J. H. McHugh.....	*7 50
Total		\$66 08

* Overpayment.

The receipt of the Treasurer for the same, returned and redeposited to the credit of the District and the Engineering Department Account thereof, is hereto attached.

The above report covers all money that has come into my hands up to this date and hitherto unaccounted for.

Respectfully submitted,

(Signed) THOS. F. JUDGE,
Clerk."

(Enclosing receipt of Treasurer, \$1,980.06 and itemized statement.)

The following is

THE RECEIPT:

"CHICAGO, Dec. 18, 1895.

Received of Thos. F. Judge, Clerk of the Sanitary District of Chicago, the sum of one thousand nine hundred eighty and six one hundredths (\$1,980.06) dollars, in full of all moneys remaining in his hands as said Clerk and belonging to the funds and accounts of said District, as specified.

Emergency Fund, Engineering Department.....	\$ 400 00
Uncalled for pay envelopes, Engineering Department, Construction Account, Special River Diversion work, Sections 1, 2, 3 and 4.....	513 93
Uncalled for pay envelopes, Engineering Department, regular pay rolls.....	66 08
Special Emergency Fund, Engineering Department, Construction Account....	1,000 00

Making a total of.....\$1,980 06

The same being in full of above, and to be deposited to the credit of the Sanitary District of Chicago, and the accounts thereof above specified.

(Signed) MELVILLE E. STONE,
Treasurer of the Sanitary District of Chicago.

By A. B. CLEGHORN,
Assistant Treasurer."

(\$1,980.06.)

REPORT ON PROTEST OF H. E. FLETCHER CONCERNING CROSSING AT SOUTHWEST BOULEVARD AND THIRTY FIRST STREET.

Mr. Mallette, Chairman, presented a report from the Committee on Judiciary, returning for filing a communication from H. E. Fletcher, being a protest

against the plans of the District with reference to the Main Channel crossing at Southwest boulevard and Thirty-first street, presented and referred to that Committee at the meeting held September 18, 1895, (page 2857 of the Proceedings); and the report was read.

Mr. Mallette, seconded by Mr. Wenter, moved that the report be adopted, ordered printed, and with enclosure, placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT:

"CHICAGO, Dec. 18, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Committee on Judiciary, to whom was referred, at the meeting held September 18, 1895 (page 2857 of the Proceedings), a communication from H. E. Fletcher, being a protest against the plans of the District with reference to the Main Channel crossing at Southwest boulevard and Thirty-first street, beg leave to report that by the purchase of certain land from George W. Lay, the District has been enabled to furnish proper communication from Thirty-first street through to Western avenue, which disposes of the objection raised by the communication, which is returned for filing.

Respectfully submitted,

(Signed) J. P. MALLETTE,
Chairman.

ALEX. J. JONES,
JOS. C. BRADEN,
Committee on Judiciary."

(One (1) enclosure.)

REPORT ON EXTRA WORK VOUCHER ON SECTION 7, \$1,448.

Mr. Boldenweck, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by construction voucher in favor of Mason, Hoge & Co., for extra work on Section 7, for \$1,448, presented and referred to that Committee at the meeting held December 11, 1895, (page 3018 of the Proceedings), recommending that said voucher be approved and ordered paid: and the report was read.

Mr. Boldenweck, seconded by Mr.

Kelly, moved that the report be adopted, ordered printed and placed on file, the recommendation made therein concurred in, and the accompanying voucher approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and placed on file, the recommendation made therein concurred in, and the accompanying voucher approved and ordered paid.

The following is

THE REPORT:

“CHICAGO, Dec. 18, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In regard to the construction voucher in favor of Mason, Hoge & Company, on Section 7, for extra work—dimension stone, rip-rap work, earth core and embankment—in the sum of one thousand four hundred and forty-eight (\$1,448.00) dollars, presented to your Honorable Body and referred to the Joint Committee on Engineering and Finance at the meeting held December 11, 1895 (page 3018 of the Proceedings), your Committee respectfully reports that they have considered the same, and find it to be in accordance with supplemental agreements with the contractors for said section, presented at the meetings held February 14 and April 20, 1894 (pages 1764 and 1881 respectively of the Proceedings).

We therefore return said voucher herewith, and recommend that the same be approved and ordered paid in the usual form.

Respectfully submitted,

(Signed) WM. BOLDENWECK,
Chairman.
FRANK WENTER,
J. P. MALLETTE,
Z. R. CARTER,
THOMAS KELLY,
ALEX. J. JONES,

Joint Committee on Engineering and Finance.”

(Accompanied by voucher.)

ENGINEERING DEPARTMENT.

Construction Account—

Mason, Hoge & Co. (Sec. 7,
Extra work—Dimension
stone, rip-rap work, earth
core and embankment,
Nov. 30, 1895)..... \$1,448 00

SUSPENSION OF CLAUSE J ON CONTRACTS FOR SECTIONS E, G, H, K, L, M, N, O, AND 1.

Mr. Boldenweck, Chairman, presented a report from the Joint Committee on Engineering and Finance, recommending that the Chief Engineer be directed to suspend clause J of the contracts for Sections E, G, H, K, L, M, N, O and 1 of the Main Channel, as provided in the report; and the report was read.

Mr. Boldenweck, seconded by Mr. Carter, moved that the report be adopted, ordered printed and placed on file, the recommendation made therein concurred in, and the Chief Engineer directed to suspend Clause J of the contracts for the sections as provided in the report.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette. Smyth and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, and the report adopted, ordered printed and placed on file, the recommendation made therein concurred in, and the Chief Engineer directed to suspend Clause J of the contracts for the sections, as provided in the report.

The following is

THE REPORT:

“CHICAGO, Dec. 18, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Joint Committee on Engineering and Finance have for many months had under consideration the question of the suspension of Clause “J” of the contracts on the Main Channel, which provides for the reservation of 10 per cent additional to the regular retained 12½ per cent until the center line of the excavation has been reached.

It appears that at the present time this clause is in force only on Sections A, E, G, H, K, L, M, N, O and 1, and, in the opinion of your Committee, the reason for the application of the same no longer exists on any contract, except that for Section A, as the contractors

have sufficient plant to insure the completion of their respective sections.

On Section A, a large portion of the material excavated was removed by hydraulic dredging at exceedingly small comparative cost, and the equipment of the section at this time does not seem to justify the suspension of Clause J.

Your Committee therefore recommend that the Chief Engineer be directed to suspend said clause on all Main Channel contracts, excepting that for Section A.

Respectfully submitted,

(Signed) WM. BOLDENWECK,
Chairman,

FRANK WENTER,
J. P. MALLETT,
Z. R. CARTER,
THOMAS KELLY,
ALEX. J. JONES.

Joint Committee on Engineering and Finance."

REPORT ON MOVING OF TRESTLE ON SECTION 1, WESTERN STONE COMPANY TRACK BACK TO SECTION 10 AND STAIRWAY ON SECTION 10.

Mr. Boldenweck, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by report from the Chief Engineer, requesting the authorization of certain expenditures for the moving of trestle on Section 1, Western Stone Company track back to Section 10 and stairway on Section 10, presented and referred to that Committee at the meeting held December 11, 1895 (page 3019 of the Proceedings), recommending that the authority requested in the report be granted; and the report was read.

Mr. Boldenweck, seconded by Mr. Kelly, moved that the report be adopted, ordered printed, and, with enclosure, placed on file, and the recommendation made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and, with enclosure, placed on file, and the recommendation made in the report concurred in.

The following is

THE REPORT:

"CHICAGO, Dec 18, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In regard to the report of the Chief Engineer, requesting authorization of the payment of certain expenditures for the moving of trestle on Section 1, Western Stone Company track back to Section 10, and stairway on Section 10, presented and referred to the Joint Committee on Engineering and Finance at the meeting held December 11, 1895, (page 3019 of the Proceedings), your Committee report as follows:

We find that the work for which authority is requested was necessary and proper, and therefore recommend that payment of the amounts, as set forth in the report of the Chief Engineer, viz: \$220.60 for moving of trestle on Section 1; \$196.86 for moving of Western Stone Company track back to Section 10; and \$27.33 for moving of stairway on Section 10, be authorized.

The report of the Chief Engineer is herewith returned for filing.

Respectfully submitted,

(Signed) WM. BOLDENWECK,
Chairman.

FRANK WENTER,
J. P. MALLETT,
Z. R. CARTER,
THOMAS KELLY,
ALEX. J. JONES,

Joint Comm'ttee on Engineering and Finance."

(One (1) enclosure.)

REPORT ON AMENDMENT TO RULE 20.

Mr. Smyth, for the Committee on Rules, presented a report from that Committee, with reference to and accompanied by the amendment to Rule 20 of the Rules of the Board of Trustees, presented, ordered printed and referred to that Committee at the meeting held December 11, 1895 (page 3023 of the Proceedings), recommending the adoption of said amendment as provided in the report; and the report and accompanying amendment were read.

Mr. Smyth, seconded by Mr. Boldenweck, moved that the report be ordered printed and placed on file, and the recommendation made in the report concurred

in and the accompanying amendment adopted as provided in the report.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, the report be ordered printed and placed on file, and the recommendation made in the report concurred in and the accompanying amendment adopted as provided in the report.

The following is

THE REPORT, WITH ENCLOSURE:

“CHICAGO, Dec. 18, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—Your Committee on Rules to whom was referred, at your last meeting (page 3023 of the Proceedings), a proposed amendment to Rule 20 of the Rules of the Board of Trustees, respectfully report that they have considered the same and recommend that Rule 20, amended as proposed, be adopted by your Honorable Body to take effect January 1, 1896.

The amendment is returned for filing.

Respectfully submitted,

(Signed) B. A. ECKHART,
Chairman.

T. A. SMYTH,

Z. R. CARTER,

Committee on Rules.”

(One (1) enclosure.)

The following is

RULE 20, AS AMENDED:

“20. The duties of the Clerk shall be to keep all the accounts, papers, books and records of the municipality, and he shall devote his time to the duties of his office. He shall attend all meetings of the Board, whether regular or called, and keep the records of the same, keep the corporate seal and affix the same to all papers which require it, and shall perform such other duties as are required by law, or by the ordinances, orders or resolutions of the Board. His salary shall be the sum of four thousand (\$4,000) dollars per annum, and his bond shall be the sum of one hundred thousand (\$100,000) dollars.”

REQUEST FOR RELEASE OF BOND ON CONTRACT FOR SECTION 9.

The Clerk presented a communication from Halvorson, Richards & Co., contractors for Section 9, stating that the work on said section had been completed, and requesting the release of the bond on their contract, as set forth in the communication; and the communication was read.

Mr. Kelly, seconded by Mr. Boldenweck, moved that the communication be ordered printed and referred to the Joint Committee on Judiciary and Finance.

The motion prevailed unanimously, and the communication was ordered printed and so referred.

The following is

THE COMMUNICATION:

“CHICAGO, DEC. 17, 1895.

To the Honorable the Board of Trustees, of the Sanitary District:

GENTLEMEN—We beg to call your attention to the fact that we have fully completed the work on Section nine (9) of the Drainage Canal, in accordance with the terms of our contract, and therefore request its acceptance and final settlement therefor. Should you decline to do this at this time, we respectfully ask that you release our bond, as you are now holding a balance due us of more than one hundred thousand dollars, which should be sufficient indemnity to cover any contingency upon completed work. We do not see that the continuance of our bond can serve the Sanitary District any good purpose, while to us it is a real hardship in the way of premium payments required to maintain same, besides the locking up of \$40,000 worth of securities pledged thereon. We have fully complied with our contract in good faith, and trust that you will relieve us of this unnecessary obligation, which will also restore to us our pledged securities.

Very respectfully,

(Signed) HALVORSON, RICHARDS & Co.”

JOINT COMMITTEE ON FINANCE AND ENGINEERING TO PURCHASE RIGHT OF WAY LANDS.

Mr. Wenter presented an order authorizing the Joint Committee on Finance and Engineering to purchase all lands necessary for the corporate purposes of the District under right of way ordinances, which have not been acquired

under authority heretofore granted; and the order was read.

Mr. Wenter, seconded by Mr. Jones, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, the order adopted, and the Joint Committee on Finance and Engineering authorized to purchase lands, as provided therein.

The following is

THE ORDER:

“Ordered, That the Joint Committee on Finance and Engineering be and it is hereby authorized to purchase, at such prices as said Joint Committee may deem just and fair, all lands necessary for the corporate purposes of this District in-

cluded within the boundaries of the right of way heretofore fixed by ordinances of the District, and which have not been acquired under authority heretofore granted.”

ADJOURNMENT TO SPECIAL TIME.

Mr. Wenter, seconded by Mr. Mallette, moved that when the Board adjourn, it do adjourn to meet Tuesday, December 24, 1895, at 1:30 o'clock P. M.

The motion prevailed unanimously, and it was so ordered.

ADJOURNMENT.

On motion of Mr. Wenter, seconded by Mr. Carter, the Board then adjourned to meet Tuesday, December 24, 1895, at 1:30 o'clock P. M., pursuant to motion.

THOS. F. JUDGE,

Clerk.

PROCEEDINGS
—OF THE—
BOARD OF TRUSTEES
—OF THE—
SANITARY DISTRICT OF CHICAGO.

DECEMBER 24, 1895.

OFFICIAL RECORD.

*(Published by authority of the Board of Trustees
of the Sanitary District of Chicago.)*

ADJOURNED MEETING.

The adjourned session of the two hundred and ninety-fourth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in

their rooms, Rialto Building, Tuesday, December 24, 1895, at 1:30 o'clock P. M., pursuant to motion.

President Eckhart called the Board to order.

On roll-call Messrs. Boldenweck, Braden, Carter, Eckhart, Kelly, Smyth and Wenter—seven (7), and subsequently Messrs. Jones and Mallette, making a total of nine (9) members, were present.

VOUCHERS.

The Clerk presented the following vouchers:

TREASURY DEPARTMENT.

Chicago Edison Co. (electric light repairs)	\$ 0 70
---	---------

GENERAL ACCOUNT.

Chicago Edison Co. (electric lighting)...	\$ 90 95
Thos. F. Judge, (pay-roll and sundry expense).....	25 22
	\$ 116 17

POLICE DEPARTMENT.

Robert Law, (coal).....	\$ 455 41
Total	\$ 572 28

ENGINEERING DEPARTMENT.

CLAUSE "J"

**Construction Account—*

		Total Retained.	Amount re- leased on this Voucher.
Griffiths & McDermott, (Sec. 1, Dec. 16, 1895).....	\$11,006 31	\$13,018 79	\$ 190 04
McArthur Brothers, (Sec. 2, Dec. 16, 1895) ..	5,110 00		
Gilman & Company, (Sec. 3, Dec. 16, 1895) ..	11,970 00		
The Qualey Construction Co., (Sec. 5, Dec. 16, 1895).....	4,234 56		
Mason, Hoge & Company, (Sec. 6, Dec. 16, 1895).....	10,161 37		
Mason, Hoge & Company, (Sec. 7, Dec. 16, 1895).....	7,552 49		
Mason, Hoge, King & Co., (Sec. 8, Dec. 16, 1895).....	12,330 95		
Mason, Hoge & Company, (Sec. 11, Dec. 16, 1895).....	1,941 63		
Mason, Hoge & Company, (Sec. 12, Dec. 16, 1895).....	2,981 78		
Mason, Hoge & Company, (Sec. 13, Dec. 16, 1895).....	1,308 13		
Smith & Eastman, (Sec. 14, Dec. 16, 1895) ..	12,775 00		
Wright, Meysenburg, Sinclair & Carry, (Sec. 15, Dec. 16, 1895).....	6,195 00		
Heldmaier & Neu, (Sec. A, Dec. 16, 1895) ..	5,897 99	25,558 40	217 44
Heldmaier & Neu, (Sec. B, Dec. 16, 1895) ..	3,179 22		
Western Dredging & Improvement Co., (Sec. C, Dec. 16, 1895).....	2,549 75		
E. D. Smith & Co., (Sec. D, Dec. 16, 1895) ..	3,932 58		
Angus & Gindele, (Sec. E, Dec. 16, 1895) ..	1,984 50	7,155 00	
Weir, McKechney & Co., (Sec. F, Dec. 16, 1895).....	1,239 00		
Gahan & Byrne, (Sec. G, Dec. 16, 1895) ..	3,183 29	7,288 96	
Gahan & Byrne, (Sec. H, Dec. 16, 1895) ..	4,064 81	7,287 49	
Christie & Lowe, (Sec. K, Dec. 16, 1895) ..	4,068 75	375 00	
The Heidenreich Company, (Sec. L, Dec. 16, 1895).....	517 12	246 25	
The Heidenreich Company, (Sec. M, Dec. 16, 1895).....	958 87	141 05	
McMahon & Montgomery Co. et al. (Sec. O, Dec. 16, 1895).....	510 64	2,205 47	
Mason, Hoge & Co. (Sec. 6, Extra special work—Retaining embankment, repairing, raising and riprapping levee, Dec. 16, 1895).....	3,083 72		
Mason, Hoge & Co. (Sec. 7, Extra work—Saving of dimension stone, Dec. 20, 1895— <i>Final</i>).....	400 00		
E. D. Smith & Co. (Sec. 10, Extra work—Removing stairway, Nov. 30, 1895— <i>Final</i>).....	27 33		
Western Stone Co. (Sec. 10, Extra work—Removing Western Stone Co.'s track back, Dec. 6, 1895— <i>Final</i>).....	196 86		
Mason, Hoge & Co. (Sec. 11, Extra work—River Diversion levees, Dec. 20, 1895— <i>Final</i>).....	1,138 82		
Griffiths & McDermott, (Sec. A, Extra			

work—Moving of trestle, Dec. 6, 1895— <i>Final</i>).....	\$ 220 60
Mason, Hoge & Co. (Sec. 12, Extra work —Repairs on Romeo trestle, Nov. 20, 1895— <i>Final</i>).....	56 12
Total.....	*\$124,776 69
Grand total.....	<u>\$125,348 97</u>

*Paid by warrants, with interest coupons attached, drawn against the tax levy of 1895.

Mr. Boldenweck, seconded by Mr. Carter, moved that the vouchers as read and shown above, be approved and ordered paid.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, and the vouchers as read and shown above, approved and ordered paid.

MONTHLY REPORT FROM ENGINEERING DEPARTMENT.

The Clerk presented a report from the Engineering Department for the month of November, 1895.

The same was read, and, by unanimous consent, was ordered printed and placed on file.

The following is

THE REPORT:

“CHICAGO, Dec. 23, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—I herewith transmit the reports of the Divisions of Construction and Drafting and Designing, showing the detailed operations of the Engineering Department for the month of November, 1895; also a classified statement of expenses to Dec. 1st, 1895.

The expenses for the month of November were as follows:

Salaries.....	\$ 14,803 15
Supplies, etc.....	1,216 31
Regular construction estimates.....	318,386 90
Extra construction estimates.....	7,484 31
Total.....	<u>\$ 341,890 67</u>

I estimate the expenses of the Depart-

ment for the month of December will be \$270,000.00.

Respectfully submitted,

(Signed) ISHAM RANDOLPH,
Chief Engineer.”

“CHICAGO, Dec. 17, 1895.

Isham Randolph, Esq., Chief Engineer:

DEAR SIR—I beg to herewith submit my report of the work of construction for the month of November, which is supplemented by the usual tabulated statements. The weather was the most unfavorable that has been encountered during any corresponding season of the year since the commencement of the work, which materially affected the output for the month. Then, too, a number of the sections were so nearly completed that the output thereon in finishing up was necessarily less than usual. The total value of the work done was \$351,-923.22, which was distributed among the several sections as follows:

Section O—The material moved on this section amounted to 39,100 cubic yards, of which 5,822 was taken out with wheel scrapers, 1,516 with wagons and 31,762 yards with dredges, the latter being carried away in barges and deposited in the lake.

No work was done on the collateral channel.

Section N—Two steam shovels were employed on this section, the material being delivered in the spoil banks by means of dump cars, as detailed in my preceding report. They were in operation a total of 30 shifts, and excavated 19,100 yards, an average of 637 yards per shift.

Sections M and L return an estimate of 45,059 cubic yards taken out with small cars and steam shovels, principally the latter, which were operated 62½ shifts, and averaged about 615 yards per

shift. There remains but about 23,000 yards in these two sections.

Sections K and I—Section I is completed. On Section K, 1,997 cubic yards were taken out with wheel scrapers, and 56,003 yards were handled with steam shovels in 84 shifts, an average of 667 cubic yards per shift.

Sections H and G—Section H is credited with an output of 58,706 cubic yards, of which 34,411 yards were excavated with the steam shovel and incline plant, an average of 756 yards per shift for the $45\frac{1}{2}$ shifts employed, and 21,928 yards were handled by the Hoover & Mason Conveyor in $39\frac{1}{2}$ shifts, an average of 555 yards per shift. The balance of the material was taken out with teams and wheel scrapers.

Section G continued work with the usual plant and a small force of teams and wheel scrapers. The latter moved only 1,245 yards. The steam shovel and belt conveyor took out 17,710 yards in 44 shifts, an average of about 400 yards per shift; the steam shovel and incline handled 21,304 yards, averaging 490 yards per shift for the $43\frac{1}{2}$ shifts employed. The total output was 40,259 cubic yards.

Section F made a fair showing, considering the bad weather, its output being 30,100 cubic yards in 101 shifts, an average of 298 yards per shift.

Section E—An accident to the new incline conveyor, by which it will be disabled for some time, in addition to the unfavorable weather, materially diminished the output on this section. Three steam shovels were employed an aggregate of $58\frac{1}{2}$ shifts, excavating 25,100 cubic yards, an average of about 430 yards per shift.

Section D continued operations with the same plant, excavating 43,900 cubic yards of glacial drift with three steam shovels in 90 shifts, an average of about 487 yards per shift.

Section C gives an output of 39,400 cubic yards, of which 3,000 yards were taken out with teams and wheel scrapers and the balance, 36,400 yards, with three steam shovels in 92 shifts, an average of about 397 yards per shift.

Section B—About 41,300 cubic yards were excavated on this section during the month, all but 200 yards of which were handled with three steam shovels in 84 shifts, an average of about 490 cubic yards per shift.

Section A—Four steam shovels and a

team force were employed on this section during the month, the total output being 41,600 cubic yards. Of this amount 6,100 yards were moved by the team force, and 35,500 yards by the four steam shovels, which were operated 111 shifts, giving an average of about 320 yards per shift.

Section 1—39,500 yards of glacial drift, 16,600 yards of solid rock and 439 yards of retaining wall masonry were returned for the month on this section. Of the glacial drift, 7,400 yards were taken out with team and shovel force, and 32,100 yards with three steam shovels in $82\frac{1}{2}$ shifts, an average of 389 yards per shift. Of the solid rock 3,200 yards were handled by the quarry force and inclines, and 13,400 yards with two Brown Cantilevers in 44 shifts, an average of 302 yards per shift.

Sections 2 and 4 employed but a small force during the month, with a corresponding output, viz.: Section 2, 8,000 yards of solid rock and 1,400 cubic yards of retaining wall masonry. Section 4, 1,390 yards of glacial drift and 4,100 yards of solid rock. Work is practically suspended on these sections until next spring to preserve the rock for use in the retaining walls. Two forces were employed on the retaining walls until the 25th of the month, when the masonry work was discontinued until next season.

Section 3 employed four cableways day and night during the month in workable weather, the output being 36,011 cubic yards of solid rock in 154 shifts, an average of about 234 yards per shift.

Section 5 is credited with 10,000 yards of glacial drift and 8,800 yards of solid rock. The work on this section will also be limited during the winter months in order to preserve the rock for use in the retaining walls.

Section 6—Four cableways were employed during the month and moved 27,527 cubic yards of solid rock in 71 shifts, an average of 387 yards per shift; 1,867 yards of rock were also taken out with derricks for backfilling the retaining walls and rip-rapping the levee. A force was also employed raising the levee with hard material and rip-rapping the west end of same.

The force engaged in extinguishing the fire in the levee completed its work on the 22nd.

Section 7—The output for the month on this section amounted to 25,300 cubic

yards of solid rock. Of this amount the two Hulett derricks moved 10,463 yards in 32 shifts, an average of 327 yards per shift. The cableway moved 7,200 yards in 14 shifts, an average of 514 yards per shift. The two Hulett conveyors handled 5,921 yards in 21 shifts, an average of 282 yards per shift.

The work of raising the levee to grade was continued and the rip-rapping of the same completed.

Section 8 returns an estimate of 8,000 yards of glacial drift and 23,000 yards of solid rock. The latter was taken out with cableways in 72 shifts, an average of 319 yards per shift.

Sections 9 and 10 are completed and

Sections 11, 12 and 13 are nearly finished.

Section 14 gives an output of 1,500 yards of glacial drift and 36,400 yards of solid rock.

Section 15 is credited with 500 yards of glacial drift and 33,900 yards of solid rock.

Owing to the fact that many of the sections are nearing completion, there will be a considerable diminution in the ensuing monthly estimates, especially during the winter months.

Respectfully submitted,

(Signed)

U. W. WESTON,

Supt. of Construction."

STATEMENT SHOWING AMOUNT OF WORK DONE DURING THE MONTH
OF NOVEMBER, 1895—(MAIN CHANNEL).

SECTIONS.	Amount Done During November.	Average Monthly Requirement.	Deficiency Under Monthly Requirement.	Excess Over Monthly Requirement.	Per Cent. of Monthly Requirement.
O.....	\$ 8,211 00	\$ 13,271 42	\$ 5 060 42	.....	62.
N.....	4,393 00	10,674 33	6,281 33	.....	41.
M.....	8,202 60	6,274 34	.....	1,928 26	131.
L.....	1,430 02	8,682 82	* 7,252 80	.....	16.
K.....	14,600 00	11,559 57	.....	2,940 43	125.
I.....	.....	11 398 49	* 11,398 49	.....	.....
H.....	17,024 74	12,493 57	.....	4,531 17	136.
G.....	11,272 52	15,277 64	4,005 12	.....	74.
F.....	8,879 50	13 493 77	4 614 27	.....	66.
E.....	6,777 00	23,230 53	16,453 53	.....	29.
D.....	11,606 06	19,215 65	7 609 59	.....	60.
C.....	9 259 00	13,443 10	4,184 10	.....	69.
B.....	11,138 04	12 901 32	1,763 28	.....	86.
A.....	12,743 38	24 012 30	11,268 92	.....	53.
1.....	31,498 60	44 801 03	13 302 43	.....	70.
2.....	11,300 00	20 950 88	9 650 88	.....	54.
3.....	27 685 00	29,177 70	1,492 70	.....	95.
4.....	3 917 00	22 982 67	19,065 67	.....	17.
5.....	9,568 00	13 887 51	8 819 51	.....	52.
6.....	21 976 50	26 827 41	4 850 91	.....	82.
7.....	17 713 50	25 622 15	7 908 65	.....	69.
8.....	19,272 50	21,799 22	2,526 72	.....	88.
9.....	.....	19,325 00	* 19,325 00	.....	.....
10.....	.....	22,458 34	* 22,458 34	.....	.....
11.....	21,437 12	19 455 05	.....	1 982 07	110.
12.....	11 910 90	20,413 93	8 503 03	.....	58.
13.....	2,276 25	21,140 02	18 863 77	.....	11.
14.....	28,872 00	22 648 61	.....	4,223 39	119.
15.....	10 096 00	23,607 65	3,511 65	.....	85.
Totals.....	\$350,960 23	\$555,526 02	\$ 220,171 11	\$ 15 605 32	63.18

* Section completed or nearly completed.

TABLE OF AMOUNT OF WORK DONE (INCLUDING RIVER DIVER

SECTIONS.	CONTRACTORS.	MAIN CHANNEL.		RIVER DIVERSION.		RUBBLE MASONRY.
		<i>Glacial Drift.</i>	<i>Solid Rock.</i>	<i>Glacial Drift.</i>	<i>Solid Rock.</i>	
		Cubic Yds.	Cubic Yds.	Cubic Yds.	Cubic Yds.	Cu. Yds.
O	McMahon & Montgomery Co. et al.	723,521	.....	.....	.....	.....
N	Hayes Bros. et al.	139,800	.....	.....	.....	.....
M	The Heidenreich Co.	711,100	.....	.....	.....	.....
L	The Heidenreich Co.	1,090,950	.....	.....	.....	.....
K	Christie & Lowe.	1,097,600	.....	.....	.....	.....
I	Christie & Lowe.	1,130,700	.....	.....	.....	.....
H	Gahan & Byrne.	573,814	.....	.....	.....	.....
G	Gahan & Byrne.	931,039	.....	.....	.....	.....
F	Weir, McKechney & Co.	700,393	.....	153,234	.....	.....
E	Angus & Gindele.	930,063	.....	95,718	.....	.....
D	E. D. Smith & Co.	1,654,000	.....	.....	.....	.....
C	Western Dredging & Imp't. Co.	1,334,363	.....	162,537	.....	.....
B	Heldmaier & Neu.	1,149,657	.....	212,486	.....	.....
A	Heldmaier & Neu.	1,080,264	.....	128,425	.....	.....
1	Griffiths & McDermott.	840,766	96,100	5,876	.....	1,744
2	McArthur Bros.	703,900	294,300	29,516	.....	1,900
3	Gilman & Co.	411,910	693,800	.....	.....	12,000
4	McArthur Bros.	1,059,400	157,800	.....	.....	.....
5	The Qualey Construction Co.	844,800	160,600	.....	.....	26,900
6	Mason, Hoge & Co.	663,800	334,600	117,100	.....	28,500
7	Mason, Hoge & Co.	172,400	763,200	97,000	43,000	5,660
8	Mason, Hoge, King & Co.	49,600	1,037,500	56,600	96,600	2,700
9	Halvorson, Richards & Co.	76,691	1,003,200	40,741	16,894	.....
10	E. D. Smith & Co.	51,743	1,141,191	39,313	58,276	.....
11	Mason, Hoge & Co.	44,032	982,750	5,756	11,483	.....
12	Mason, Hoge & Co.	42,531	987,840	11,739	.....	9,169.44
13	Mason, Hoge & Co.	33,422	1,028,100	.....	.....	10,760
14	Smith & Eastman.	360,200	953,800	.....	.....	.....
15	Wright, Meysenburg, Sinclair & Carry	32,100	379,900	.....	.....	.....
Totals.....		18,619,559	10,014,681	1,152,041	226,553	99,333.44

Main Channel, glacial drift, including 97,100 cubic yards collateral
Main Channel, solid rock.....
River Diversion, glacial drift.....
River Diversion, solid rock.....
Rubble Masonry.....

Total amount required to be done December 1st, 1895.....
Total amount done December 1st, 1895.....

Total amount short as per contracts.....

Total value of work done under regular contracts, December 1st, 1895...
Total value of collateral work done, December 1st, 1895.....

Total value of all construction work done, December 1st, 1895.....

Reserved, regular contracts..... { 12½ per cent.....

Current estimates, regular contracts..... { 10 per cent.....

Current estimates, collateral work.....

Total disbursement, Construction Account, to December 1st, 1895...

NOTE.—*Overhaul to Levee—Section 1 not included.

SION) AND CONDITION OF WORK ON CONTRACTS, DEC. 1ST, 1895.

Total value of work done to Dec. 1st, 1895, on each section.	Total value of work required to be done to Dec. 1st, 1895.	Amounts behind as per contracts.	Amounts ahead as per contracts.	Average monthly progress called for in contracts.	Average monthly progress necessary from July 1st, 1895, to time of completion.	Progress made during month of November, 1895.
\$ 150,871 31	\$ 272,954 00	\$ 122 082 69	.....	\$14,866 00	\$ 22,841 19	\$ 8,211 00
32,154 00	202,812 27	170,658 27	.....	10,674 33	23,861 19	4 398 00
154,308 70	125,486 80	.....	\$ 23 821 90	6,274 34	4 128 43	8 202 60
214,917 15	173,656 40	.....	41,260 75	8,682 82	6,004 19	1 430 02
274,400 00	231,191 40	.....	43,208 60	11,559 57	11,731 43	14,500 00
282,675 00	227,969 60	.....	54 705 40	11,398 49	5 061 60	.....
166,406 06	249,871 40	83,465 34	.....	12 493 57	24,985 55	17,024 74
260,690 92	305,552 80	44,861 88	.....	15,277 64	18,749 39	11,272 52
215,199 66	278,794 09	63,594 43	.....	13,493 77	15,434 52	8,879 50
279 785 28	480,569 70	200,784 42	.....	23,230 53	39,921 05	6,777 00
437,276 25	557,253 85	119,977 60	.....	19,215 65	29 540 95	11,606 06
351,771 50	426,175 59	74,404 09	.....	14,695 71	22,031 33	9,259 00
367,778 61	424,439 82	56,711 21	.....	14,637 58	20,879 94	11,138 04
370,161 01	730,882 65	360,721 64	.....	25,202 85	57,123 97	12,743 38
*425,331 96	841,233 20	415,901 24	.....	44,801 03	74,652 70	31,498 60
598 275 98	719,183 64	120,907 66	.....	21,152 46	31,405 39	11,390 00
775 697 70	720,058 50	.....	55,639 20	29,177 70	30,312 19	27 685 00
634 655 54	804,393 45	169,737 91	.....	22,982 67	37 534 95	3 917 00
457,382 00	634 369 10	176,987 10	.....	18,387 51	37,866 87	9 568 00
518,194 00	594,628 67	46 434 67	.....	26,896 13	35,435 40	22,057 50
680,996 00	655,248 48	.....	25,747 52	25,694 42	25,710 70	18 595 50
884,351 00	863 245 03	.....	21,105 92	23,979 03	23 247 48	19,272 50
814 984 61	716,408 28	.....	98,576 33	19,900 23	11 328 29	.....
975,087 60	856 089 00	.....	118 998 60	23,780 25	6,364 03	.....
802,990 52	709,900 92	.....	93,039 60	19,719 47	16 048 13	21,437 12
831,340 82	788 019 44	.....	93 321 38	20,500 54	13,502 66	11,910 90
814,854 47	761,040 72	.....	53,813 75	21,140 02	8,976 03	2 276 25
802 250 00	815,349 96	13,099 96	.....	22 648 61	34 732 92	26,872 00
230,240 00	330,507 10	100,267 10	.....	23,607 65	34,647 27	20,096 00
\$13,835,027 65	\$15,447,335 91	\$2 340,597 21	\$728,283 95	\$565,575 57	\$724,565 04	\$351,923 23

channel.....	Cubic Yards.
.....	18,619 559
.....	10,014 681
.....	1,152,041
.....	226,553
.....	99 333.44
.....	\$15,447,335 91
.....	13,835,027 65
.....	\$1,612,308 26
.....	*\$13 835.027 65
.....	+665 313 49
.....	\$14,500,341 14
.....	\$1,717,113 03
.....	69,375 69
.....	319,102 73
.....	11 585 58
.....	2,117,177 03
.....	\$12,383,164 11

†Overhaul to Levee—Section 1 included.

SANITARY DISTRICT OF CHICAGO — ENGINEERING DEPARTMENT.

CLASSIFIED STATEMENT OF EXPENDITURES DURING THE MONTH OF NOVEMBER, 1895.

CLASSIFICATION.	Eng. Expenses.		Construction.		Total for Month.		Previously Reported.		Total to Date.	
	Salaries.	Supplies, Etc.	Regular.	Extra.	Eng. Expenses.	Construction	Eng. Expenses.	Construction	Eng. Expenses.	Construction
Preliminary Sundries.....							\$120,633 75		\$120,633 75	
Locating Route, Main Channel.....							32,222 94		32,222 94	
Borings and Test Pits.....							16,206 50		16,206 50	
Maps and Plans for Board Rooms.....	\$ 682 50	\$ 81 16			\$ 763 66		37,498 55		37,498 55	
Chicago River Survey.....	1,923 78	51 96			1,975 74		32,186 74		32,186 74	
Right of Way.....	13 20	6 52			19 72		20,786 73		20,806 45	
Flood Measurements.....	489 50	74 90			564 40		17,473 61		18,038 01	
Disposal Works at Lockport.....	400 50	364 60			825 10		23,559 05		24,384 16	
Regular Construction.....	9,532 39	519 53	\$318,386 90		10,071 92	\$318,386 90	318,992 50	\$11,749,906 62	328,464 42	\$12,068,293 52
Extra Work—Main Channel.....							9,723 42	13,455 51	9,723 42	13,455 51
Extra Work—River Diversion.....							813 75	333,903 43	813 75	333,903 43
Levees, Trestles and Embankments.....				\$5,955 62		5,955 62	1,754 91	192,010 05	1,754 91	192,010 05
Spillway.....							5,246 04	20,518 41	5,246 04	20,518 41
Tow Path.....							1,157 05			
Building Western Stone Company's Bridge.....							198 66	19,029 05	1,157 05	19,029 05
Building Stephens Street Bridge.....							985 06	22,329 80	985 06	22,329 80
Building Atchison, Topeka & Santa Fe Bridge.....							770 72	18,738 80	770 72	18,738 80
Building Mt. Forest Foot Bridge.....							32 17		32 17	
Bldg West. Av. Temp'ry Bridge and Roadway.....							66 30	506 80	66 30	506 80
Repairing and Moving Bridges.....							1,050 13	7,736 19	1,050 13	7,736 19
Office Building at Sag.....							2,339 43		2,339 43	
Saving of Building Sand.....								781 63		781 63
Mortar, Sand and Cement Tests.....										
Saving of Dimension Stone.....										
Erosion Test.....	493 28	15 08			508 36		7,249 03	10,768 00	7,257 39	10,768 00
Temporary Sanitary Relief.....							1,496 75		1,496 75	
Photographs of Works.....	125 00	102 56			227 56		237 00		237 00	
Public Reports.....							8,349 44		3,577 00	
Remasurement of Main Channel.....							1,138 14		1,138 14	
Effect of Main Channel water on Lake Levels.....							5,223 82		5,223 82	
General Account.....	323 00				323 00		853 30		1,176 30	
	740 00				740 00		71,200 23		71,940 23	
Totals.....	\$14,803 15	\$1,216 31	\$318,386 90	\$7,484 31	\$16,019 46	\$325,871 21	\$733,405 27	\$12,383,898 34	\$749,427 73	\$12,709,709 55

"CHICAGO, Dec. 18, 1895.

Isham Randolph, Esq., Chief Engineer:

DEAR SIR—The work of the Division of Drafting and Designing for the month of November was as follows:

The work on plans for Regulating Works and tail race was continued. Considerable time was given to the examination of plans submitted by contractors, bidding on bear trap dam and sluice gates.

The survey along the North Branch, in the vicinity of Chicago avenue, was continued. The North Branch was sounded from Chicago avenue to south end of Goose Island.

Considerable time was given to miscellaneous hydraulic data, pertaining to the Desplaines, Illinois and Mississippi Rivers, and also to the levels of the Great Lakes.

The testing of cement for use in the retaining walls was continued, as was also the work of preparing record photographs and the maintenance of water gauges.

Miscellaneous work was done pertaining to plans for improving the South Branch, inspection of Main Channel and improvement of the Stock Yards slips.

The following work was finished: The maps, tracings and index map of the Chicago River survey; tracings of a chart and table showing the comparative efficiency of machines on the Main Channel; a map showing projects for intercepting sewers and tunnels through the city; a tracing of a table of elevations of gauges and dams on the Illinois and Mississippi Rivers, and a tracing of a profile of the St. Lawrence River. Additional notes were platted on the sewerage map.

Work was also done on some tables of areas of triangular sections for use on construction work, and on profiles of the St. Mary's River and the lakes and St. Lawrence River.

The regular platting was continued during the month on the following plans:

The water shed map of the city and vicinity; the progress profiles of the Main Channel and retaining walls; parts 2 and 3 of the general topographical map; the Lower Illinois Valley map, and the large scale contour map between Lockport and the Will County line.

Expenses for December will be approximately the same as for November.

Very respectfully,

(Signed) THOS. T. JOHNSTON,
Assistant Chief Engineer."

RETURN OF EMERGENCY FUND OF LAW DEPARTMENT.

The Clerk presented a report from the Attorney, transmitting receipt from the Treasurer for \$1,500, being in full of the balance of the Emergency Fund of the Law Department in his hands; as Attorney, returned to the District; and the report and accompanying receipt were read.

Mr. Kelly, seconded by Mr. Smyth, moved that the report and accompanying receipt be ordered printed and placed on file.

The motion prevailed unanimously, and it was so ordered.

The following is

THE REPORT, WITH ACCOMPANYING RECEIPT:

"CHICAGO, Dec. 24, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—On November 14, 1894, I returned to the Treasurer of the District a portion of the emergency fund of this department, leaving remaining in my hands belonging to said fund the sum of fifteen hundred (\$1,500) dollars. This amount I have this day turned over to the Treasurer, as shown by his receipt herewith transmitted.

Respectfully submitted,

(Signed) GEO. E. DAWSON,
Attorney."
(Accompanied by receipt, \$1,500.)

The following is

THE RECEIPT:

"CHICAGO, Dec. 24, 1895.

Received of George E. Dawson, Attorney of the Sanitary District of Chicago, a check for the sum of fifteen hundred dollars, drawn on the Globe National Bank, and payable to the order of Melville E. Stone, Treasurer of Sanitary District of Chicago, same being emergency fund of Law Department.

(Signed) MELVILLE E. STONE,
Treasurer of the Sanitary District of Chicago.

By A. B. CLEGHORN,
(\$1,500.00.) *Assistant Treasurer."*

REPORT ON RETURN BY CLERK OF EMERGENCY FUNDS AND OTHER MONEYS.

Mr. Wenter, Chairman, presented a report from the Committee on Finance, with reference to and accompanied by report from the Clerk, transmitting receipt from the Treasurer for \$1,908.06, being in full of emergency funds and other moneys in his possession as Clerk hitherto not accounted for, which report was presented and referred to that Committee at the meeting held December 18, 1895 (page 3025 of the Proceedings), recommending that said report be approved and filed; and the report was read.

Mr. Wenter, seconded by Mr. Mallette, moved that the report be adopted, ordered printed, and, with enclosure, placed on file, and the recommendation made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed, and, with enclosure, placed on file, and the recommendation made in the report concurred in.

The following is

THE REPORT:

"CHICAGO, Dec. 24, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN—In regard to the report of the Clerk, transmitting receipt of the Treasurer for \$1,908.06, being in full of emergency funds and other moneys in his possession hitherto not accounted for, presented to your Honorable Body, and referred to the Committee on Finance at the meeting held December 18, 1895 (page 3025 of the Proceedings), your Committee respectfully report that they have examined and compared said report and accompanying receipt, and find same to be correct.

Your Committee therefore return said report and enclosure for filing, and recommend that same be approved.

Respectfully submitted,

(Signed) FRANK WENTER,
Chairman,
Z. R. CARTER,
J. P. MALLETTE,
Committee on Finance."

(One (1) enclosure.)

APPROVAL OF BONDS OF CLERK AND ATTORNEY.

Mr. Wenter, Chairman of the Committee on Finance, presented the oath of office and bond of Mr. James Reddick, as Clerk of the District, in the sum of one hundred thousand (\$100,000) dollars, with William F. Merle, Jacob M. Horn, James B. Heaney and Ernest Fecker, Jr., as sureties.

Also the oath of office and bond of Mr. Charles S. Deneen, as Attorney of the District, in the sum of twenty thousand (\$20,000) dollars, with Helge A. Haugan and Axel Chytraus as sureties.

Mr. Wenter, seconded by Mr. Braden, moved that the bond just presented, of Mr. James Reddick, as Clerk of the District, be accepted, approved, and, with oath of office, placed on file.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, and the bond, just presented, of Mr. James Reddick, as Clerk of the District, accepted, approved, and, with oath of office, placed on file.

Mr. Mallette, seconded by Mr. Boldenweck, moved that the bond just presented of Mr. Charles S. Deneen, as Attorney of the District, be accepted, approved, and, with oath of office, placed on file.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, and the bond, just presented, of Mr. Charles S. Deneen, as Attorney of District, accepted, approved, and with oath of office, placed on file.

REPORT ON CONDITION AND REPAIR OF RIVER DIVERSION LEVEES, AND ON EMERGENCY WORK ON ACCOUNT OF FIRE IN LEVEES ON SECTIONS 6 AND 7.

Mr. Boldenweck, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to and accompanied by two (2) reports of the Chief Engineer, and order, concerning the condition of the River Diversion levees and the emergency work on account of fire in levees on Sections 6 and 7, presented and referred to that Com-

mittee at the meetings held November 13 and December 2 and 11, 1895, (pages 2918, 3004 and 3019 of the Proceedings), recommending that authority for the expense of said emergency work on Sections 6 and 7 (\$1,155.13) be granted, and that the Chief Engineer be directed to expend not to exceed \$5,000 for the raising of the levees on Sections 6, 7 and 11, all as provided in the report; and the report was read.

Mr. Boldenweck, seconded by Mr. Carter, moved that the report be adopted, ordered printed, and with enclosures placed on file, and the recommendations made in the report concurred in.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, the report adopted, ordered printed and, with enclosures, placed on file, and the recommendations made in the report concurred in.

The following is

THE REPORT:

“CHICAGO, Dec 24, 1895.

To the Honorable the Board of Trustees of the Sanitary District of Chicago:

GENTLEMEN — Your Committee to whom was referred the communication of the Chief Engineer of November 13, 1895, (proceedings, page 2918) and order, referred December 2, 1895, (proceedings, page 3004) with regard to levees, and also the further communication of December 6, 1895, (proceedings, page 3019) in which he reports the expense incurred by him in fighting the fire on Sections 6 and 7, and asking your approval thereof, as also for some action on the part of your Honorable Body upon the the whole subject of levees as set forth in his previous letter, have had the matter under consideration and have made a personal inspection of the levees in question and respectfully report as follows:

We recommend that the Clerk be authorized to pay upon the voucher of the Chief Engineer said sum of \$1,155.13, said expense having been incurred in putting out the fire on Sections 6 and 7, and in protecting said levees from further damage therefrom.

We also recommend that the Chief Engineer be instructed to proceed under

the Extra Work clause of the contracts and fix such prices as he shall deem just and equitable for raising the levees on Sections six (6), seven (7) and eleven (11), and that if same are accepted by the contractors, he be authorized, with the concurrence of the President and Attorney, to enter into agreements with the contractors for said sections to do said work, the aggregate of expenditure hereunder, however, not to exceed the sum of five thousand (\$5,000) dollars.

The reports and order are returned for filing.

Respectfully submitted,

(Signed) WM. BOLDENWECK,
Chairman.
FRANK WENTER,
Z. R. CARTER,
THOMAS KELLY,
J. P. MALLETT,
ALEX. J. JONES,

Joint Committee on Engineering and Finance.”

(Three (3) enclosures.)

REPORT ON BIDS FOR CONSTRUCTING REGULATING WORKS ON MAIN CHANNEL AT LOCKPORT.

Mr. Boldenweck, Chairman, presented a report from the Joint Committee on Engineering and Finance, with reference to the bids for the work of constructing Regulating Works on the Main Channel at Lockport, presented and referred to that Committee at the meeting held November 20, 1895, (Page 2944 of the Proceedings) recommending the awarding of the contract for said work to Christie & Lowe at the prices in their bid, with modifications as set forth in the report, and recommending the return to E. D. Smith & Co. and Shailer & Schniglau Co. of the checks deposited with their bids; and the report was read.

Mr. Boldenweck, seconded by Mr. Wenter, moved that the report be adopted, ordered printed and placed on file, and the recommendations made therein concurred in.

Mr. Mallette, seconded by Mr. Braden, moved as a substitute that action on the report just presented be deferred until the next meeting of the Board.

The substitute motion prevailed unanimously, and the President declared action on the report just presented, deferred until the next meeting.

The following is

THE REPORT:

“CHICAGO, Dec. 24, 1895.

*To the Honorable the Board of Trustees
of the Sanitary District of Chicago:*

GENTLEMEN—The Joint Committee on Engineering and Finance to whom was referred the bids for Regulating Works on the Main Channel, at Lockport (Proceedings, page 2944), respectfully report as follows:

We find that the aggregate of the bids for the different classes of work for which bids were invited which were submitted by Messrs Christie & Lowe is the lowest. Since there is no question as to their financial standing and responsibility, they are therefore the lowest responsible bidders for this work.

They have also agreed to accept in lieu of the prices made by them under classifications b, c and d of their proposal, under b, eleven (11) dollars instead of fifteen (15) dollars, under c, five (5) dollars instead of eight (8) dollars, and under d, fifty-nine (59) cents instead of one (1) dollar.

We therefore recommend that the contract for constructing the Regulating Works for the Main Channel be let to Christie & Lowe, the lowest responsible bidders, at their bid, with the above modifications in favor of the District, the prices being as follows:

(a) Lump sum for all work applying to sluice gates constructed above elevation of seventeen and seventy-five one-hundredths (17.75) feet below datum, one hundred and twenty thousand (\$120,000.) dollars.

(b) Price per cubic yard for masonry, applying to sluice gates below elevation, seventeen and seventy-five one-hundredths (17.75) feet below datum, eleven (\$11.) dollars.

(c) Price per cubic yard for concrete, applying to sluice gates below elevation, seventeen and seventy-five one-hundredths (17.75) feet below datum, five (\$5.) dollars.

(d) Price per cubic yard for excavation below elevation, seventeen and seventy-five one-hundredths (17.75) feet below datum, measured in excavation, fifty-nine (\$0.59) cents.

(e) Lump price for all metal, timber and labor entering into the construction of bear trap, fifty-eight thousand (\$58,000) dollars.

We recommend that the President and Clerk be authorized and directed to execute, on the part of the District, the form of agreement heretofore agreed upon for this work, at the prices herein stated, so soon as same shall have been executed by Christie & Lowe, and a bond with sureties satisfactory to the Finance Committee be furnished by them.

We also recommend that the checks of E. D. Smith & Co., and Shailer & Schniglaui Company, deposited with their bids, be returned to them.

Respectfully submitted,

(Signed) WM. BOLDENWECK,
Chairman.
FRANK WENTER,
Z. R. CARTER,
THOMAS KELLY,
ALEX. J. JONES,

*Joint Committee on Engineering and
Finance.”*

PAYMENT OF MATURING BONDS AND INTEREST OF BONDS.

Mr. Wenter, Chairman of the Committee on Finance, presented an order, authorizing and directing the Clerk to draw a warrant on the Treasurer, payable to the order of the Treasurer, in the sum of five hundred and eighty-two thousand, five hundred (\$582,500) dollars, to be used in the payment of maturing bonds and interest on bonds of the District, and to be drawn from the fund appropriated for that purpose, as provided in the order; and the order was read.

Mr. Wenter, seconded by Mr. Carter, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, the order adopted and the Clerk authorized and directed as provided in the order.

The following is

THE ORDER:

“*Ordered*, That the Clerk of this District be and he is hereby authorized and directed to draw a warrant upon the Treasurer, payable to the order of Melville E. Stone, Treasurer, for the sum of five hundred eighty-two thousand five hundred (\$582,500.00) dollars, and deliver the same to said Treasurer.

Said sum to be drawn from amount

heretofore appropriated for payment of bonds and interest thereon and to be used by said Treasurer in payment of bonds and interest on bonds maturing on the first day of January, 1896, as follows:

Second issue, 150 bonds.....	\$150,000 00
Fourth issue, 200 bonds.....	200,000 00
Second issue, six months interest.....	71,250 00
Third issue, six months interest.....	71,250 00
Fourth issue, six months interest.....	90,000 00

Total.....\$582,500 00”

AMENDMENT TO AGREEMENT FOR EXCAVATION OF ROCK ON SECTION D.

Mr. Boldenweck presented an order, amending the supplemental agreement with E. D. Smith & Co. for the excavation of rock found on Section D, presented at the meeting held November 27, 1895 (page 2957 of the Proceedings), as provided in the order; and the order was read.

Mr. Boldenweck, seconded by Mr. Wenter, moved the adoption of the order.

On roll-call the vote stood: Yeas—Messrs. Boldenweck, Braden, Carter, Eckhart, Jones, Kelly, Mallette, Smyth and Wenter—nine (9). Nays—None.

Upon which result the President declared the motion carried, the order adopted, and the supplemental agreement with E. D. Smith & Co. amended as provided therein.

The following is

THE ORDER:

“Ordered, That the agreement between

this District and E. D. Smith & Company, bearing date the 27th day of November, 1895, for the excavation of stone on Section D, and authorized by this Board at its meeting of said date, be amended by adding at the end of the 15th line of the second page thereof the words, “except as herein modified, and also that the use of a channeling machine shall not be required in said work,” and that the President and Clerk execute said agreement so amended on the part of the District.”

ADJOURNMENT.

On motion of Mr. Braden, seconded by Mr. Smyth, the Board then adjourned.

THOS. F. JUDGE,
Clerk.

REGULAR MEETING.

The two hundred and ninety-fifth regular meeting of the Board of Trustees of the Sanitary District of Chicago was held in their rooms, Rialto Building, Wednesday, December 25, 1895, at 1:30 o'clock P. M.

In the absence of the President, the Clerk called the Board to order.

On roll call there were no members of the Board present.

At 2 o'clock P. M., there being still no members of the Board present, and consequently no quorum, the Board stood adjourned.

THOS. F. JUDGE,
Clerk.

Edward J. [unclear]

27-441 A. 1002-101

EDMUND J. JAMES

UNIVERSITY OF ILLINOIS-URBANA



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